

**HONDA**GL500 INTERSTATE  
GL650 INTERSTATE

'83 ADDENDUM

## HOW TO USE THIS MANUAL

Follow the Maintenance Schedule recommendations to ensure that the vehicle in peak operating condition and the emission levels are within the standards set by the U.S. Environmental Protection Agency. Performing the first scheduled maintenance is very important. It compensates for the initial wear that occurs during the break-in period.

All service procedures are based on the standard GL500. In those few instances where the Interstate model differs, the variations will be called out in the text or a note. Section 20, "Interstate Accessories" covers torque specifications and removal/reinstallation of accessories.

Sections 1 through 3 apply to the whole motorcycle, while sections 4 through 19 describe parts of the motorcycle, grouped according to location.

Find the section you want on this page, then turn to the table of contents on page 1 of that section.

Most sections start with an assembly or system illustration, service information and troubleshooting for the section. The subsequent pages give detailed procedures.

If you are not familiar with this motorcycle, read the TECHNICAL FEATURES in section 21.

If you don't know the source of the trouble, go to section 22, TROUBLESHOOTING.

Refer to section 23 for 1982 service information.

Refer to section 24 for 1983 GL650/INTERSTATE service information.

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HONDA MOTOR CO., LTD.  
Service Publications Office

## CONTENTS

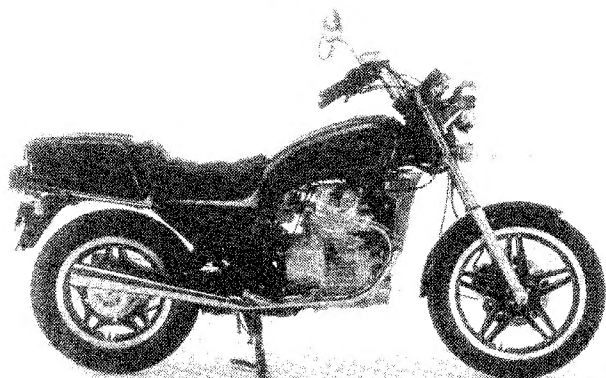
|            |                                             |    |
|------------|---------------------------------------------|----|
|            | GENERAL INFORMATION                         | 1  |
|            | LUBRICATION                                 | 2  |
|            | MAINTENANCE                                 | 3  |
| ENGINE     | FUEL SYSTEM                                 | 4  |
|            | ENGINE REMOVAL/INSTALLATION                 | 5  |
|            | CYLINDER HEAD/VALVE                         | 6  |
|            | CLUTCH/OIL PUMP                             | 7  |
|            | AC GENERATOR/FLYWHEEL/<br>REAR COVER        | 8  |
|            | COOLING SYSTEM                              | 9  |
|            | CAMSHAFT/CAM CHAIN                          | 10 |
|            | TRANSMISSION                                | 11 |
|            | CRANKSHAFT/PISTON                           | 12 |
| CHASSIS    | FRONT WHEEL/SUSPENSION                      | 13 |
|            | REAR WHEEL/BRAKE/FINAL DRIVE/<br>SUSPENSION | 14 |
|            | HYDRAULIC DISC BRAKE                        | 15 |
| ELECTRICAL | BATTERY/CHARGING SYSTEM                     | 16 |
|            | IGNITION SYSTEM                             | 17 |
|            | STARTER SYSTEM                              | 18 |
|            | LIGHTS/SWITCHES                             | 19 |
|            | INTERSTATE ACCESSORIES                      | 20 |
|            | TECHNICAL FEATURES                          | 21 |
|            | TROUBLESHOOTING                             | 22 |
|            | '82 GL500/INTERSTATE ADDENDUM               | 23 |
|            | '83 GL650/INTERSTATE ADDENDUM               | 24 |



**HONDA**  
GL500  
GL500 INTERSTATE

## MODEL IDENTIFICATION

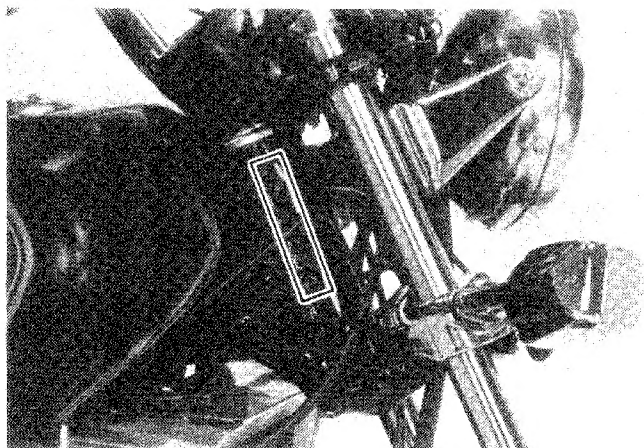
GL500



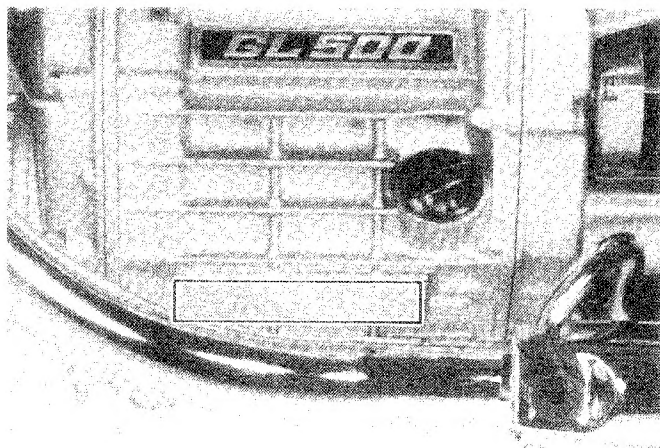
Beginning Frame Number: PC020 \* BM000022 ~

NOTE: The asterisk (\*) is part of the frame number.

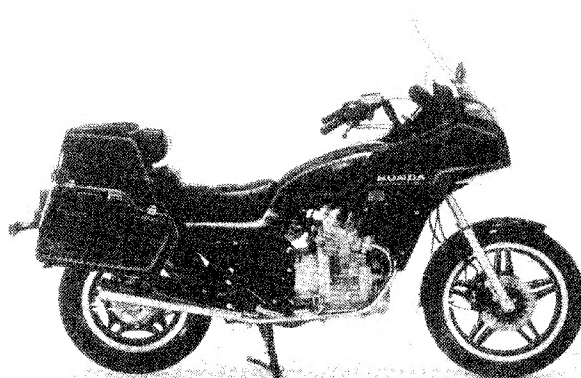
The frame serial number is stamped on the right side of the steering head.



The engine serial number is stamped on the lower left side of the engine case.

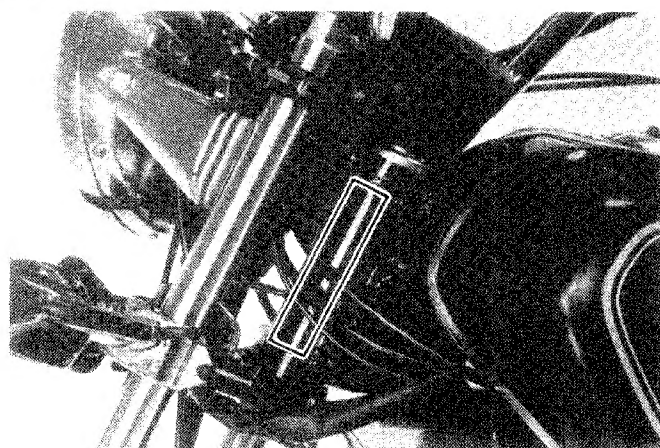


GL500I

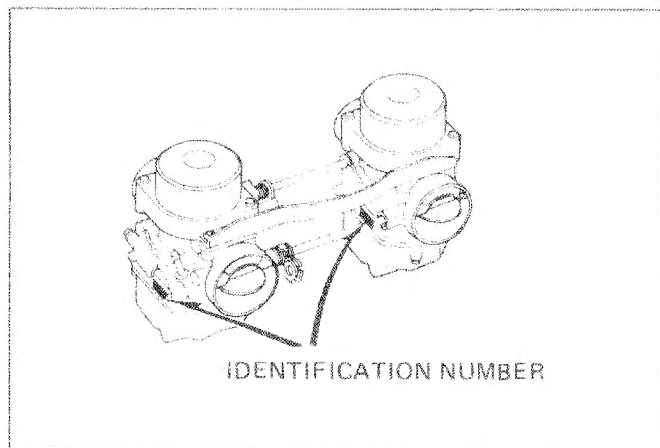


Beginning Frame Number: PC021 \* BM000007 ~

The vehicle identification number is on the left side of the steering head.



The carburetor identification number is on the left side of the carburetor body.







**HONDA**  
GL500  
GL500 INTERSTATE

# 1. GENERAL INFORMATION

|                            |     |                                    |     |
|----------------------------|-----|------------------------------------|-----|
| GENERAL SAFETY             | 1-1 | CABLE & HARNESS ROUTING            | 1-7 |
| SERVICE RULES              | 1-1 | EMISSION CONTROL SYSTEM            | 1-9 |
| SPECIFICATIONS             | 1-2 | EMISSION CONTROL INFORMATION LABEL | 1-9 |
| TORQUE VALUES              | 1-4 |                                    |     |
| SPECIAL TOOLS/COMMON TOOLS | 1-5 |                                    |     |

## GENERAL SAFETY

### WARNING

*If the engine must be running to do some work, make sure the area is well-ventilated. Never run the engine in a closed area. The exhaust contains poisonous carbon monoxide gas.*

### WARNING

*The battery electrolyte contains sulfuric acid. Protect your eyes, skin and clothing. In case of contact, flush thoroughly with water and call a doctor if your eyes were exposed.*

### WARNING

*Gasoline is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks in your working area.*

### WARNING

*The battery generates hydrogen gas which can be highly explosive. Do not smoke or allow flames or sparks near the battery, especially while charging it.*

## SERVICE RULES

1. Use genuine HONDA or HONDA-recommended parts and lubricants or their equivalent. Parts that do not meet HONDA's design specifications may damage the motorcycle.
2. Use the special tools designed for this product.
3. Use only metric tools when servicing this motorcycle. Metric bolts, nuts, and screws are not interchangeable with English fasteners. The use of incorrect tools and fasteners may damage the motorcycle.
4. Install new gaskets, O-ring cotter pins, lock plates, etc. when reassembling.
5. When tightening bolts or nuts, begin with larger-diameter or inner bolts first, and tighten to the specified torque diagonally, unless a particular sequence is specified.
6. Clean parts in cleaning solvent upon disassembly. Lubricate any sliding surfaces before reassembly.
7. After reassembly, check all parts for proper installation and operation.



## SPECIFICATIONS

| ITEM       |                                | GL500                                                      | GL500 INTERSTATE                                        |
|------------|--------------------------------|------------------------------------------------------------|---------------------------------------------------------|
| DIMENSIONS | Overall length                 | 2,207 mm (86.9 in)                                         | 2,305 mm (90.7 in)                                      |
|            | Overall width                  | 875 mm (34.4 in)                                           | 875 mm (34.4 in)                                        |
|            | Overall height                 | 1,178 mm (46.4 in)                                         | 1,505 mm (59.2 in)                                      |
|            | Wheel base                     | 1,495 mm (58.8 in)                                         | ←                                                       |
|            | Seat height                    | 788 mm (31.0 in)                                           | 778 mm (30.6 in)                                        |
|            | Foot peg height                | 322 mm (12.7 in)                                           | 315 mm (12.4 in)                                        |
|            | Ground clearance               | 132 mm ( 5.2 in)                                           | 127 mm ( 5.0 in)                                        |
|            | Dry weight                     | 207 kg (456 lbs)                                           | 230 kg (507 lbs)                                        |
|            | Curb weight (Wet)              | 224 kg (494 lbs)                                           | 247 kg (547 lbs)                                        |
| FRAME      | Type                           | Diamond                                                    |                                                         |
|            | F. suspension, travel          | Telescopic, 150 mm (5.9 in)                                |                                                         |
|            | R. suspension, travel          | Swing arm, 120 mm (4.7 in)                                 |                                                         |
|            | F. suspension air pressure     | 80–120 kPa (0.8–1.2 kg/cm <sup>2</sup> , 11–17 psi)        |                                                         |
|            | R. suspension air pressure     | 0–500 kPa<br>(0–5.0 kg/cm <sup>2</sup> , 0–70 psi)         | 100–500 kPa<br>(1.0–5.0 kg/cm <sup>2</sup> , 14–70 psi) |
|            | Front tire size                | 3.50S19-4PR                                                | Tubeless                                                |
|            | Rear tire size                 | 130/90-16 67S                                              | Tubeless                                                |
|            | Cold tire pressures            | Up to 90 kg<br>(200 lbs) load                              | Front<br>Rear                                           |
|            |                                | Up to vehicle<br>capacity load                             | Front<br>Rear                                           |
|            | F. brake and lining swept area | Single disc brake, 476 cm <sup>2</sup><br>(73.8 sq.in)     | Double disc brake, 812 cm <sup>2</sup><br>(125.9 sq.in) |
| ENGINE     | R. brake and lining swept area | Internal expanding shoes, 201 cm <sup>2</sup> (31.2 sq.in) |                                                         |
|            | Fuel capacity                  | 17.6 lit (4.6 US gal, 3.9 Imp gal)                         |                                                         |
|            | Fuel reserve capacity          | 2.5 lit (0.7 US gal, 0.5 Imp gal)                          |                                                         |
|            | Caster angle                   | 62°                                                        |                                                         |
|            | Trail length                   | 117 mm (4.6 in)                                            |                                                         |
|            | Front fork oil capacity        | 210 cc (7.1 oz) ATF after disassembly                      |                                                         |
|            |                                | 163 cc (5.5 oz) ATF after draining                         |                                                         |
|            | Rear shock oil capacity        | 669 cc (22.6 oz) ATF                                       |                                                         |
|            | Type, cylinder arrangement     | Water cooled, 4 stroke O.H.V. engine                       |                                                         |
|            | Engine weight                  | 65 kg (143.3 lbs)                                          |                                                         |
| ENGINE     | Bore and stroke                | 78 x 52 mm (3.071 x 2.047 in)                              |                                                         |
|            | Displacement                   | 497 cm <sup>3</sup> (30.3 cu.in)                           |                                                         |
|            | Compression ratio              | 10.0 : 1                                                   |                                                         |
|            | Cylinder compression           | 1,200 kPa (12.0 kg/cm <sup>2</sup> , 171 psi)              |                                                         |
|            | Valve train                    | Chain driven camshaft and push rod                         |                                                         |
|            | Oil capacity                   | 3.6 lit (3.8 US qt, 3.1 Imp qt) after disassembly          |                                                         |
|            |                                | 3.0 lit (3.2 US qt, 2.6 Imp qt) after draining             |                                                         |
|            | Oil type                       | SAE 10W-40 SE, Honda 4-stroke oil or equivalent            |                                                         |
|            | Lubrication system             | Forced pressure and wet sump                               |                                                         |
|            | Air filtration system          | Dry paper element                                          |                                                         |
| ENGINE     | Cooling system capacity        | 2.0 lit (0.52 US gal, 0.44 Imp gal)                        |                                                         |
|            | Radiator cap relief pressure   | 75–105 kPa (0.75–1.05 kg/cm <sup>2</sup> , 10.7–14.9 psi)  |                                                         |



| ITEM        |                                |                                | GL500                                                 | GL500 INTERSTATE         |
|-------------|--------------------------------|--------------------------------|-------------------------------------------------------|--------------------------|
| ENGINE      | Camshaft (at 1 mm lift)        |                                | 6° BTDC (at 1 mm lift), 79° BTDC (at 0 lift)          |                          |
|             | Intake valve                   | Opens                          | 46° ABDC (at 1 mm lift), 123° ABDC (at 0 lift)        |                          |
|             |                                | Closes                         | 46° BBDC (at 1 mm lift), 114° BBDC (at 0 lift)        |                          |
|             | Exhaust valve                  | Opens                          | 6° ATDC (at 1 mm lift), 85° ATDC (at 0 lift)          |                          |
|             |                                | Closes                         |                                                       |                          |
|             | Valve clearance (cold)         | IN                             | 0.08 mm (0.003 in)                                    |                          |
|             |                                | EX                             | 0.10 mm (0.004 in)                                    |                          |
|             | Idle speed                     |                                | 1,100 ± 100 rpm                                       |                          |
| CARBURETION | Carburetor type                |                                | VB type, 34 mm (1.3 in) venturi bore                  |                          |
|             | Identification number          |                                | VB29A                                                 |                          |
|             | Pilot screw                    |                                | Refer to page 4-12                                    |                          |
|             | Float level                    |                                | 15.5 mm (0.61 in)                                     |                          |
| DRIVE TRAIN | Clutch                         |                                | Wet, multi-plate                                      |                          |
|             | Transmission                   |                                | 5-speed constant-mesh                                 |                          |
|             | Primary reduction ratio        |                                | 2.242 (74/33)                                         |                          |
|             | Gear ratio 1st                 |                                | 2.733 (41/15)                                         |                          |
|             | Gear ratio 2nd                 |                                | 1.850 (37/20)                                         |                          |
|             | Gear ratio 3rd                 |                                | 1.416 (34/24)                                         |                          |
|             | Gear ratio 4th                 |                                | 1.148 (31/27)                                         |                          |
|             | Gear ratio 5th                 |                                | 0.931 (27/29)                                         |                          |
|             | Final reduction ratio          |                                | 3.091 (34/11)                                         |                          |
|             | Gear shift pattern             |                                | Left foot operated return system                      |                          |
|             |                                | 1-N-2-3-4-5                    |                                                       |                          |
|             | Final gear oil capacity        |                                | 160–180 cc (5.4–6.1 oz)                               |                          |
| ELECTRICAL  | Ignition                       |                                | Transistorized                                        |                          |
|             | Ignition timing "F" mark       |                                | 15° BTDC at idle                                      |                          |
|             | Full advance                   |                                | 45 ± 1.5° BTDC/3,000 rpm                              |                          |
|             | Starting system                |                                | Starting motor                                        |                          |
|             | Alternator                     |                                | AC generator, 12V-252W/5,000 rpm                      |                          |
|             | Battery capacity               |                                | 12V – 14AH                                            |                          |
|             | Spark plug                     |                                |                                                       |                          |
|             | Standard                       |                                | D8EA (NGK) or X24 ES-U (ND)                           |                          |
|             | For extended high speed riding |                                | D9EA (NGK) or X27 ES-U (ND)                           |                          |
|             | For optional radio             |                                |                                                       |                          |
| Standard    |                                | DR8ES-L (NGK) or X24ESR-U (ND) |                                                       |                          |
|             | For extended high speed riding |                                | DR8ES (NGK) or X27ESR-U (ND)                          |                          |
|             | Spark plug gap                 |                                | 0.6–0.7 mm (0.024–0.028 in)                           |                          |
|             | Fuse                           |                                | 10A, 30A (Main fuse)                                  | 5A, 10A, 30A (Main fuse) |
| LIGHTS      | Headlight (High/Low)           |                                | 12V–60/55W H4 bulb (Phillips 12342/99, or equivalent) |                          |
|             | Tail/stoplight                 |                                | 12V–3/32 cp No. 1157                                  |                          |
|             | Turn signal light              | (Front)                        | 12V–32 cp No. 1034                                    |                          |
|             |                                | (Rear)                         | 12V–32 cp No. 1073                                    |                          |
|             | Meter light                    |                                | 12V–2 cp No. 57                                       |                          |
|             | Neutral indicator              |                                | 12V–2 cp No. 57                                       |                          |
|             | Turn signal indicator          |                                | 12V–2 cp No. 57                                       |                          |
|             | High beam indicator            |                                | 12V–2 cp No. 57                                       |                          |
|             | Oil pressure warning light     |                                | 12V–2 cp No. 57                                       |                          |
|             |                                |                                |                                                       |                          |





## TORQUE VALUES

### ENGINE

| ITEM                      | QTY | Thread Dia (mm) | Torque  |           |         |
|---------------------------|-----|-----------------|---------|-----------|---------|
|                           |     |                 | N-m     | kg-m      | ft-lb   |
| Crankshaft cap bolt       | 7   | 8               | 20-24   | 2.0-2.4   | 14-17   |
| Connecting rod cap nut    | 4   | 8               | 28-32   | 2.8-3.2   | 20-23   |
| Cylinder head bolt        | 8   | 12              | 50-60   | 5.0-6.0   | 36-43   |
| Valve adjuster lock nut   | 8   | 6               | 15-18   | 1.5-1.8   | 11-13   |
| Plywheel bolt             | 1   | 12              | 90-105  | 9.0-10.5  | 65-76   |
| Clutch center lock nut    | 1   | 20              | 80-100  | 8.0-10.0  | 58-72   |
| Primary drive gear bolt   | 1   | 12              | 80-95   | 8.0-9.5   | 58-69   |
| Starting clutch fork bolt | 3   | 8               | 18-25   | 1.8-2.5   | 13-18   |
| Cooling fan bolt          | 1   | 8               | 20-25   | 2.0-2.5   | 14-18   |
| Cam sprocket lock nut     | 1   | 20              | 80-100  | 8.0-10.0  | 58-72   |
| Cam sprocket bolt         | 2   | 7               | 16-20   | 1.6-2.0   | 12-14   |
| Radiator drain bolt       | 1   | 12              | 1.5-3.0 | 0.15-0.30 | 1.1-2.2 |

### FRAME

|                                |   |    |        |          |       |
|--------------------------------|---|----|--------|----------|-------|
| Engine mount bolt              | 2 | 12 | 60-80  | 6.0-8.0  | 43-58 |
| Engine mount bolt              | 4 | 10 | 45-70  | 4.5-7.0  | 33-51 |
| Front engine hanger nut        | 4 | 10 | 30-40  | 3.0-4.0  | 22-29 |
| Front axle nut                 | 1 | 12 | 55-65  | 5.5-6.5  | 40-47 |
| Front axle holder nut          | 4 | 8  | 18-25  | 1.8-2.5  | 13-18 |
| Steering stem nut              | 1 | 24 | 90-120 | 9.0-12.0 | 65-87 |
| Fork bridge pinch bolt         | 2 | 7  | 9-15   | 0.9-1.5  | 7-11  |
| Steering stem pinch bolt       | 2 | 10 | 30-40  | 3.0-4.0  | 22-29 |
| Handlebar holder bolt          | 4 | 8  | 25-35  | 2.5-3.5  | 18-25 |
| Rear axle nut                  | 1 | 14 | 50-80  | 5.0-8.0  | 36-58 |
| Final driven flange bolt       | 5 | 10 | 40-50  | 4.0-5.0  | 29-36 |
| Rear shock absorber mount bolt | 2 | 10 | 45-55  | 4.5-5.5  | 33-40 |
| Shock linkage pivot bolt       | 4 | 10 | 45-55  | 4.5-5.5  | 33-40 |
| Rear brake stopper arm bolt    | 2 | 8  | 15-25  | 1.5-2.5  | 11-18 |
| Foot peg bolt                  | 2 | 10 | 30-40  | 3.0-4.0  | 22-29 |
| Passenger foot peg bolt        | 2 | 10 | 45-60  | 4.5-6.0  | 33-43 |
| Rear brake pedal bolt          | 1 | 6  | 10-15  | 1.0-1.5  | 7-11  |
| Gear shift pedal bolt          | 1 | 6  | 10-14  | 1.0-1.4  | 7-10  |
| Swing arm pivot bolt           | 1 | 30 | 9-12   | 0.9-1.2  | 7-9   |
| Swing arm pivot lock nut       | 1 | 30 | 90-120 | 9.0-12.0 | 65-87 |
| Drive shaft lock bolt          | 1 | 8  | 18-28  | 1.8-2.8  | 13-20 |
| Rear axle pinch bolt           | 1 | 8  | 20-30  | 2.0-3.0  | 14-22 |
| Final gear case nut            | 3 | 10 | 45-70  | 4.5-7.0  | 33-51 |
| Front brake caliper mount bolt | 2 | 10 | 30-45  | 3.0-4.5  | 22-33 |
| Front brake caliper pivot bolt | 1 | 12 | 25-30  | 2.5-3.0  | 18-22 |
| Front brake caliper bolt       | 1 | 8  | 20-25  | 2.0-2.5  | 14-18 |
| Exhaust pipe joint nut         | 4 | 6  | 8-14   | 0.8-1.4  | 6-10  |
| Muffler band bolt              | 4 | 8  | 18-28  | 1.8-2.8  | 13-20 |
| Brake pedal stopper bolt       | 1 | 6  | 6-9    | 0.6-0.9  | 4-7   |
| Side stand pivot bolt          | 1 | 10 | 10-20  | 1.0-2.0  | 7-14  |
| Side stand pivot nut           | 1 | 10 | 30-40  | 3.0-4.0  | 22-29 |
| Fuel valve nut                 | 1 | 18 | 20-25  | 2.0-2.5  | 14-18 |
| Main stand bolt                | 2 | 10 | 30-40  | 3.0-4.0  | 22-29 |
| Air cleaner case               | 2 | 6  | 6-9    | 0.6-0.9  | 4-7   |
| Power chamber bolt             | 3 | 8  | 24-30  | 2.4-3.0  | 17-22 |
| Rear fender bolt               | 2 | 14 | 30-40  | 3.0-4.0  | 22-29 |

Torque specifications listed above are for the most important tightening points. If a torque specification is not listed, follow the standards given below.

### STANDARD TORQUE VALUES

| Type            | Torque N-m (kg-m, ft-lb)    | Type                   | Torque N-m (kg-m, ft-lb)    |
|-----------------|-----------------------------|------------------------|-----------------------------|
| 5 mm bolt, nut  | 4.5-6.0 (0.45-0.6, 3.3-4.3) | 5 mm screw             | 3.5-5.0 (0.35-0.5, 2.5-3.6) |
| 6 mm bolt, nut  | 8-12 (0.8-1.2, 6-9)         | 6 mm screw             | 7-11 (0.7-1.1, 5-8)         |
| 8 mm bolt, nut  | 18-25 (1.8-2.5, 13-18)      | 6 mm flange bolt, nut  | 10-14 (1.0-1.4, 7-10)       |
| 10 mm bolt, nut | 30-40 (3.0-4.0, 22-29)      | 8 mm flange bolt, nut  | 24-30 (2.4-3.0, 17-22)      |
| 12 mm bolt, nut | 50-60 (5.0-6.0, 36-43)      | 10 mm flange bolt, nut | 30-40 (3.0-4.0, 22-29)      |



## SPECIAL TOOLS/COMMON TOOLS

### SPECIAL

Asterisked (\*) tools are new for the GL500 and GL500i

| DESCRIPTION                        | NUMBER          | ALTERNATE TOOL                                    | NUMBER          | REF. PAGE           |
|------------------------------------|-----------------|---------------------------------------------------|-----------------|---------------------|
| * Pinion gear retainer wrench      | 07910-MA10100   | Pinion gear retainer wrench                       | 07910-4150000   | 14-31               |
| * Pinion gear puller attachment    | 07934-MA10100   |                                                   |                 | 14-34               |
| * Pinion gear puller catcher       | 07934-MA10200   |                                                   |                 | 14-34               |
| * Oil seal driver                  | 07965-MA10100   |                                                   |                 | 14-12, 14-13        |
| * Oil seal driver attachment       | 07965-MA10200   |                                                   |                 | 14-12, 14-13        |
| * Oil seal guide                   | 07973-MA10100   |                                                   |                 | 14-32               |
| * O-ring guide                     | 07973-MA10200   |                                                   |                 | 14-32               |
| * Socket bit 17 mm                 | 07703-0020500   |                                                   |                 | 14-17, 14-23        |
| Vacuum gauge                       | 07404-0020000   | Equivalent tools commercially available U.S.A.    | M937B-021-XXXXX | 3-9                 |
| (Vacuum gauge attachment)          | (07510-3000100) | Vacuum gauge set                                  |                 | 3-9                 |
| Torx driver bit                    | 07703-0010100   |                                                   |                 | 8-6                 |
| Piston slider                      | 07755-0010000   | Equivalent tools commercially available in U.S.A. |                 | 12-18               |
| Socket wrench 17 x 27 mm           | 07907-4150000   |                                                   |                 | 10-3                |
| Pivot lock nut wrench              | 07908-4690001   | Swingarm locknut wrench                           | KS-ABA-08-469   | 14-17, 14-23        |
| Ring gear retainer wrench          | 07910-3710100   |                                                   |                 | 14-28               |
| Circlip pliers                     | 07914-3230001   | Equivalent tools commercially available in U.S.A. |                 | 13-14, 15-6         |
| Allen wrench 6 mm                  | 07917-3230000   |                                                   |                 | 13-13               |
| Clutch center holder               | 07923-4150000   |                                                   |                 | 7-3, 7-7            |
| Gear holder                        | 07924-4150000   |                                                   |                 | 8-4, 10-3, 12-6     |
| Crank cap puller                   | 07935-4150000   | (Use hydraulic press)                             |                 | 12-7                |
| Bearing remover 20 mm              | 07936-3710000   |                                                   |                 | 11-7, 11-8          |
| Bearing remover attachment 20 mm   | 07936-3710600   |                                                   |                 | 11-7, 11-8          |
| Bearing remover handle             | 07936-3710100   |                                                   |                 | 11-7, 11-8          |
| Bearing remover weight             | 07936-3710200   |                                                   |                 | 11-7, 11-8          |
| Needle bearing remover             | 07936-8890300   |                                                   |                 | 14-19               |
| Piston remover                     | 07941-4150000   |                                                   |                 | 12-3                |
| Valve guide driver attachment      | 07943-4150000   |                                                   |                 | 6-9                 |
| Bearing driver attachment          | 07945-3330300   |                                                   |                 | 8-9, 13-25          |
| Crank cap driver set               | 07945-4150100   |                                                   |                 | 11-3, 12-14         |
| Ring gear center guide             | 07965-4150100   |                                                   |                 | 12-15               |
| Mechanical seal driver attachment  | 07945-4150400   | Driver                                            | 07945-3710200   | 9-7                 |
| Seal driver attachment             | 07945-4150200   |                                                   |                 | 14-20, 14-21, 14-32 |
| Ball race driver attachment        | 07946-3290000   | Ball race remover/installer                       | 07946-3710400   | 13-24               |
| Steering stem driver               | 07946-3710601   |                                                   |                 | 13-24               |
| Fork seal driver attachment        | 07947-KA20200   |                                                   |                 | 13-17               |
| Ball race remover                  | 07953-KA50000   | Race remover                                      | 07953-4250002   | 13-24               |
| Ring gear dis/assembly tool set    | 07965-4150001   |                                                   |                 | 14-29               |
| Ring gear dis/assembly tool A      | 07965-4150201   |                                                   |                 | 14-29               |
| Ring gear dis/assembly tool B      | 07965-3710200   |                                                   |                 | 14-29               |
| Main bearing dis/assembly tool     | 07973-4150000   |                                                   |                 | 12-11, 12-13        |
| Valve guide reamer                 | 07984-6110000   | Valve guide reamer                                | 07984-6570100   | 6-8, 6-10           |
| Preload or preload inspection tool | 07998-4150000   |                                                   |                 | 14-27, 14-33        |
| Carburetor synchronizing wrench    | 07908-4600200   |                                                   |                 | 3-9                 |
| Hand vacuum pump                   | A973X-041-XXXXX |                                                   |                 | 4-14                |
| Timing inspection plug             | 07999-4150000   |                                                   |                 | 17-6                |

# GENERAL INFORMATION



**HONDA**  
GL500  
GL500 INTERSTATE

## COMMON

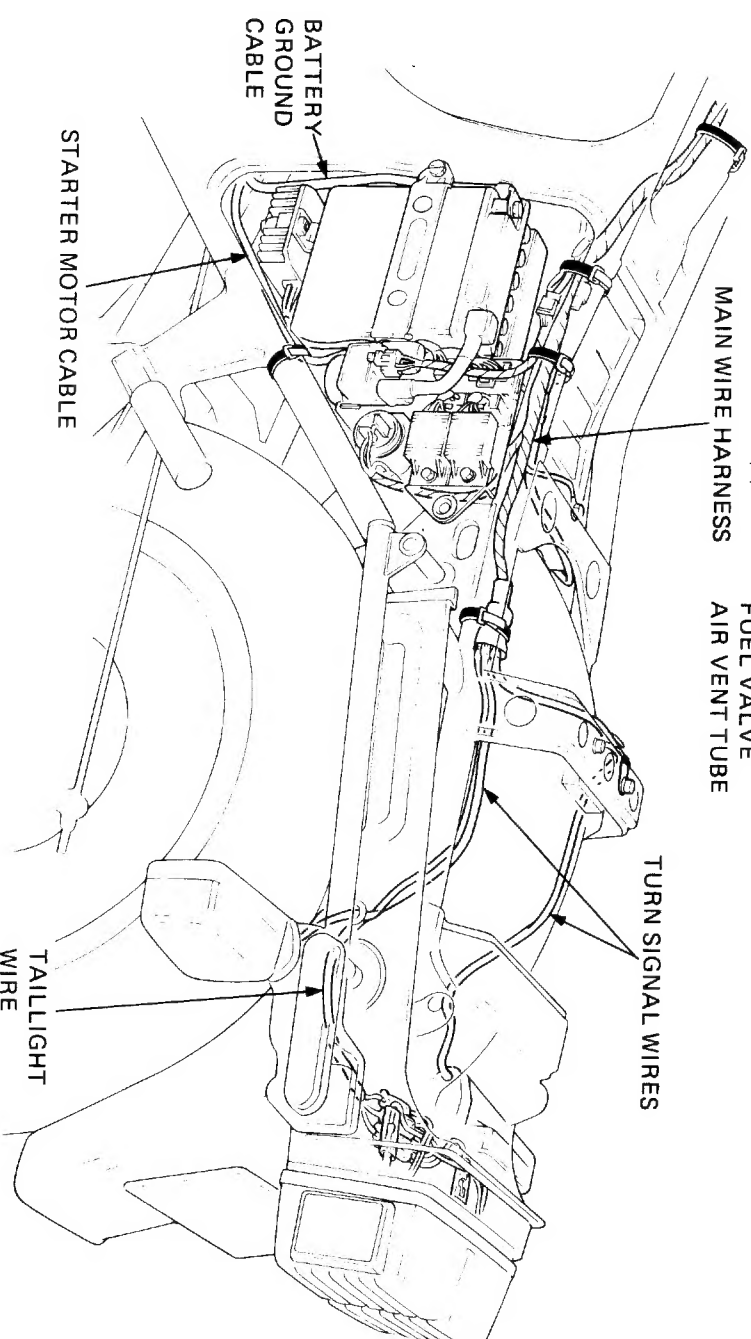
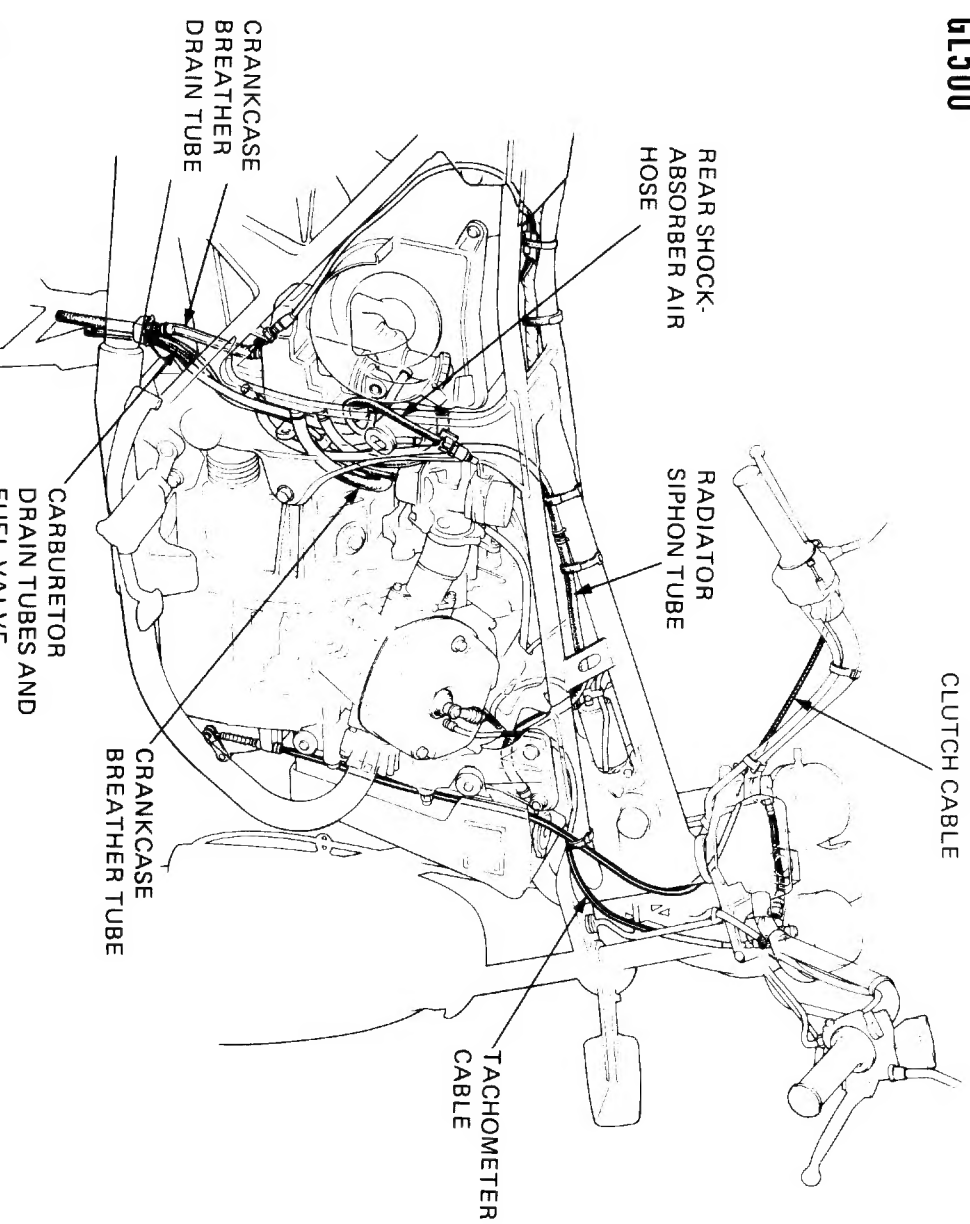
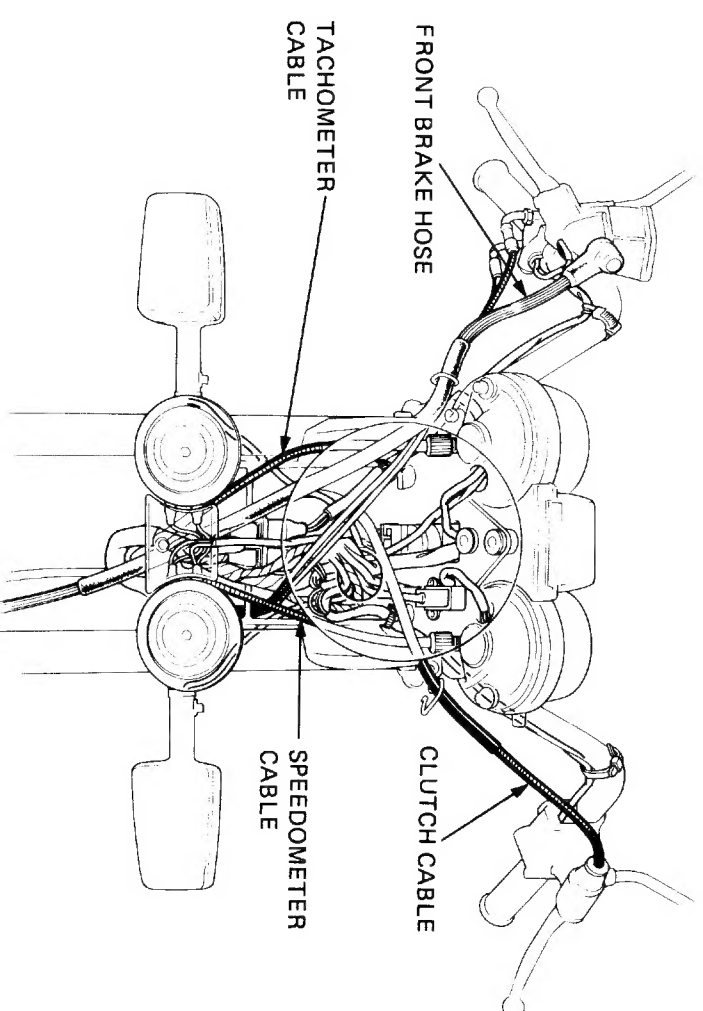
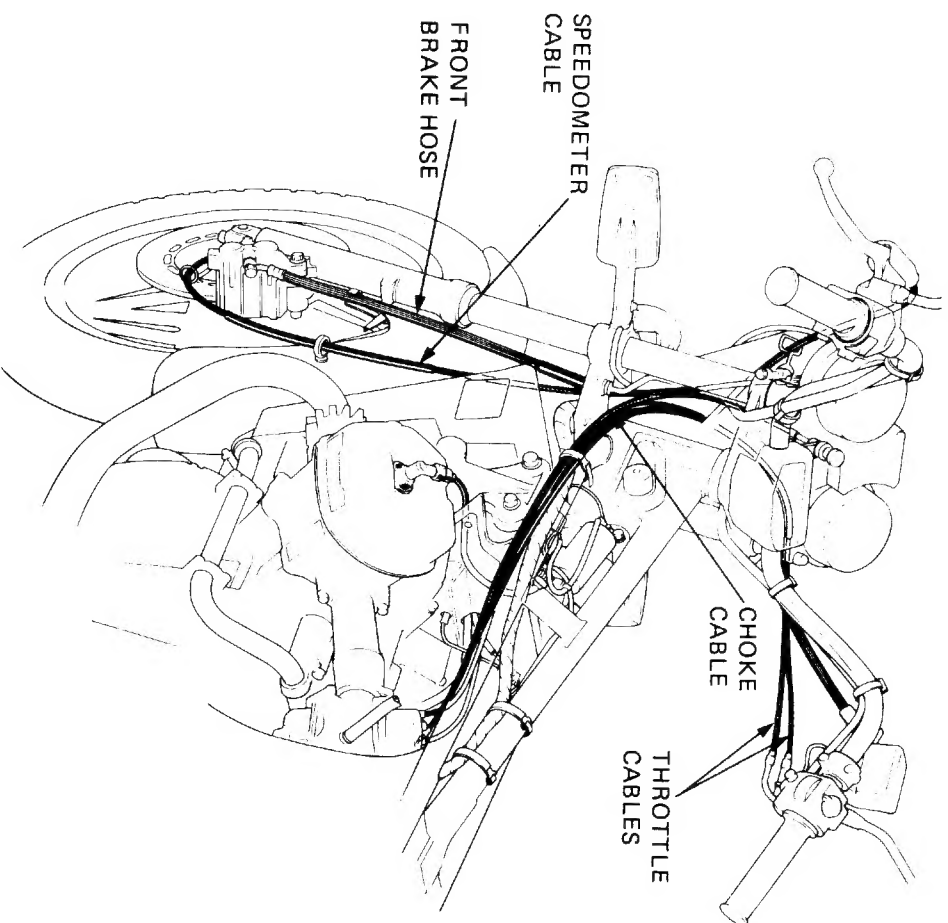
| DESCRIPTION                      | NUMBER        | ALTERNATE TOOL                                    | NUMBER        | REF. PAGE       |
|----------------------------------|---------------|---------------------------------------------------|---------------|-----------------|
| Float level gauge                | 07401-0010000 |                                                   |               | 4-10            |
| Pin spanner                      | 07702-0010000 | Adjustable pin spanner                            |               | 13-22, 13-25    |
| Valve adjuster wrench 10 x 12 mm | 07708-0030200 | Valve adjuster wrench                             | 07908-3640000 | 3-8             |
| Valve adjusting wrench           | 07708-0030400 |                                                   |               | 3-8             |
| Bearing retainer wrench B        | 07710-0010200 | Retainer wrench                                   | 07910-3230101 | 13-8, 14-7      |
| Bearing retainer wrench body     | 07710-0010401 |                                                   |               | 13-8, 14-7      |
| Lock nut wrench 26 x 30 mm       | 07716-0020202 |                                                   |               | 7-3, 7-7        |
| Steering stem socket 30 x 32 mm  | 07716-0020400 | Equivalent tools commercially available in U.S.A. |               | 13-22           |
| Extension                        | 07716-0020500 |                                                   |               | 7-3             |
| Rotor puller                     | 07733-0010000 | Rotor puller                                      | 07933-0010000 | 9-6             |
| Flywheel puller                  | 07733-0020001 | Flywheel puller                                   | 07933-3950000 | 8-5             |
| Valve guide remover 5.6 mm       | 07742-0010200 | Valve guide driver                                | 07942-6110000 | 6-9             |
|                                  |               |                                                   | or            |                 |
| Pin driver 3.5 mm                | 07744-0010300 | Pin driver 3.5 mm                                 | 07942-6570100 |                 |
| Attachment 32 x 35 mm            | 07746-0010100 | Attachment                                        | 07944-6340100 | 14-18           |
|                                  |               | Attachment                                        | 07946-3640000 | 11-10           |
| Attachment 37 x 40 mm            | 07746-0010200 | Attachment                                        | 07946-6920100 |                 |
| Attachment 42 x 47 mm            | 07746-0010300 | Attachment                                        | 07946-4250100 | 14-20, 14-21    |
|                                  |               | Attachment                                        | 07945-3330100 | 11-10, 13-10    |
| Attachment 52 x 55 mm            | 07746-0010400 | Attachment                                        |               | 14-8            |
| Attachment 62 x 68 mm            | 07746-0010500 | Attachment                                        | 07946-3710200 | 11-10           |
| Pilot 15 mm                      | 07746-0040300 |                                                   | 07946-3600000 | 11-10           |
| Pilot 20 mm                      | 07746-0040500 |                                                   |               | 13-10, 14-8     |
| Pilot 22 mm                      | 07746-0041000 |                                                   |               | 11-10           |
| Pilot 25 mm                      | 07746-0040600 |                                                   |               | 8-9             |
| Pilot 30 mm                      | 07746-0040700 |                                                   |               | 11-10           |
| Driver                           | 07749-0010000 |                                                   |               | 14-30           |
| Fork oil seal driver             | 07747-0010100 |                                                   |               | 8-9, 9-7, 11-10 |
| Valve spring compressor          | 07757-0010000 | Valve spring compressor                           | 07957-3290001 | 13-7            |
|                                  |               |                                                   |               | 6-7, 6-13       |



**CABLE AND HARNESS ROUTING**

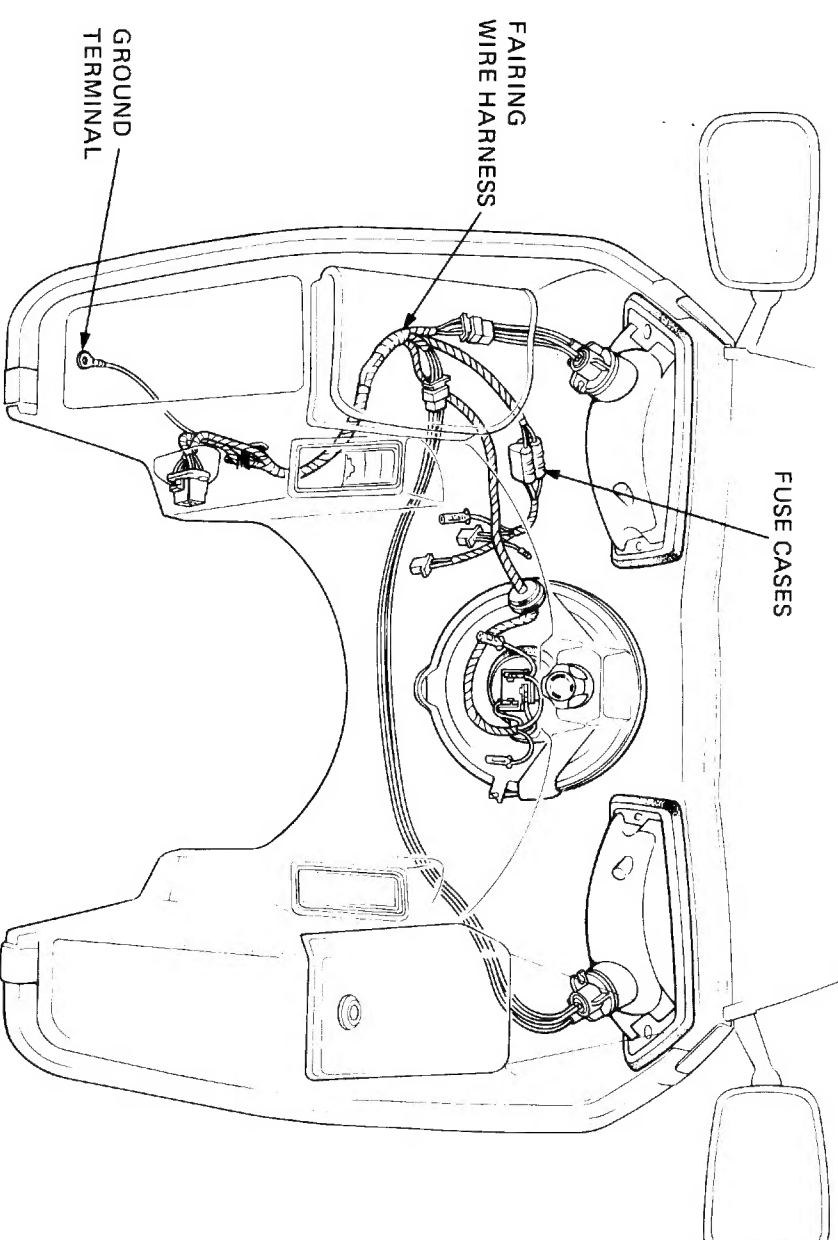
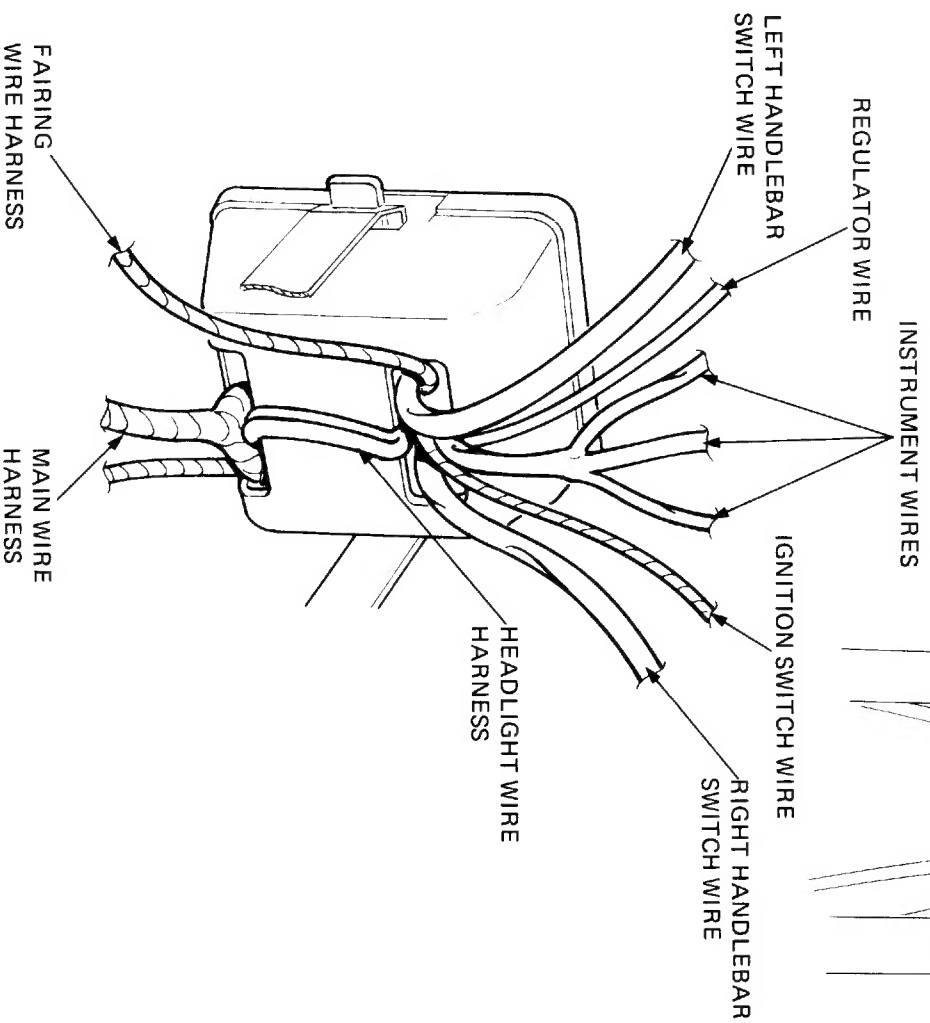
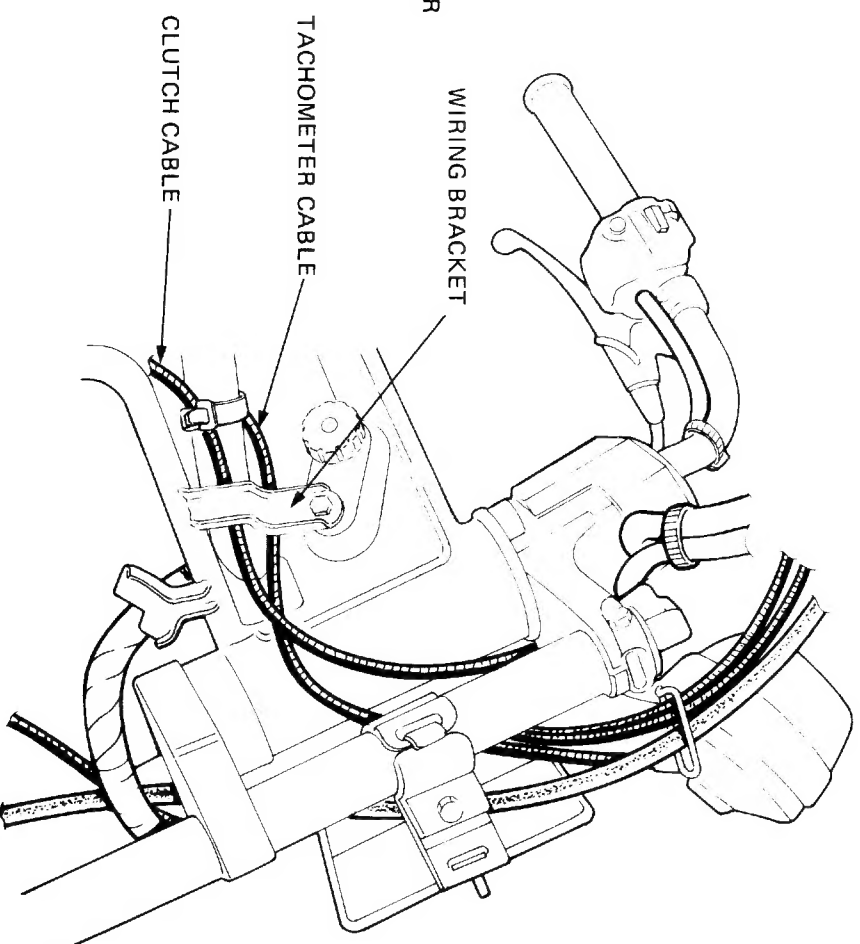
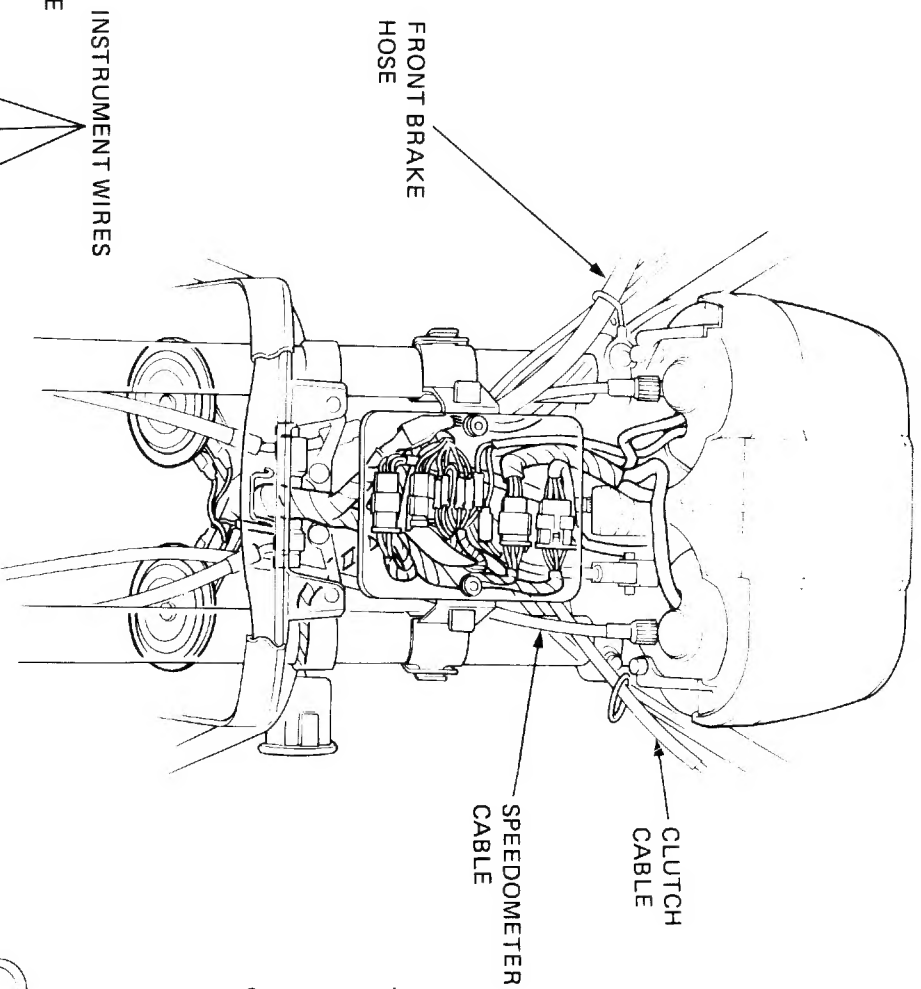
**GL500**

**GENERAL INFORMATION**





**GL500 INTERSTATE**

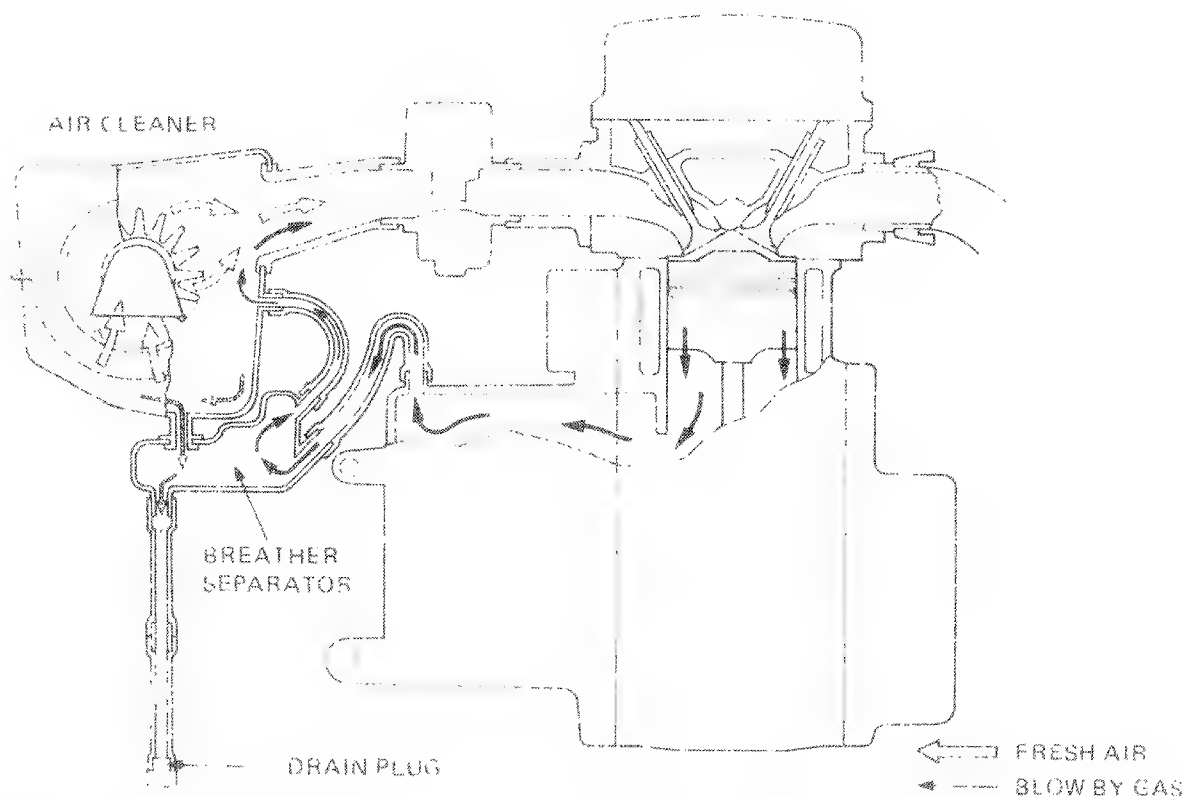




## EMISSION CONTROL SYSTEM

- The GL500 is equipped with two emission control systems.
- **EXHAUST EMISSION CONTROL SYSTEM**  
The exhaust emission control system is composed of a factory pre-set carburetor. No adjustment should be made except to the idle speed with the throttle stop screw.
- **CRANKCASE EMISSION CONTROL SYSTEM**  
The engine is equipped with a "closed crankcase system" to prevent crankcase emissions from entering the atmosphere. Blow-by gas is returned to the combustion chamber through the breather tube, separator and intake pipe.

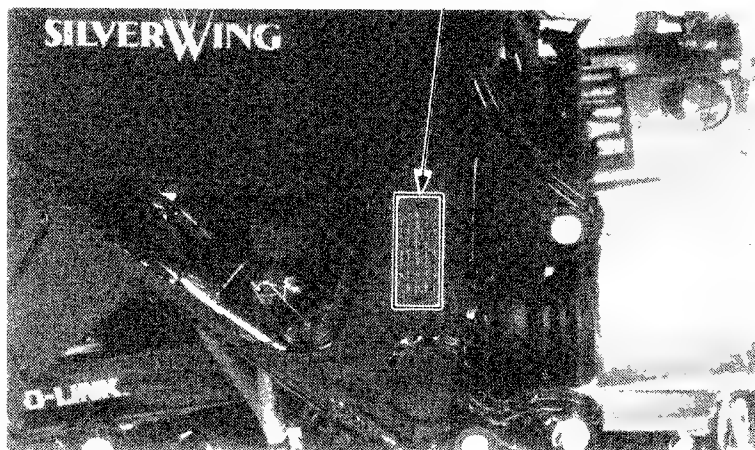
### CRANKCASE EMISSION CONTROL SYSTEM



### EMISSION CONTROL INFORMATION LABEL

The Emission Control Information label is located in the frame as shown. It gives basic tune-up specifications.

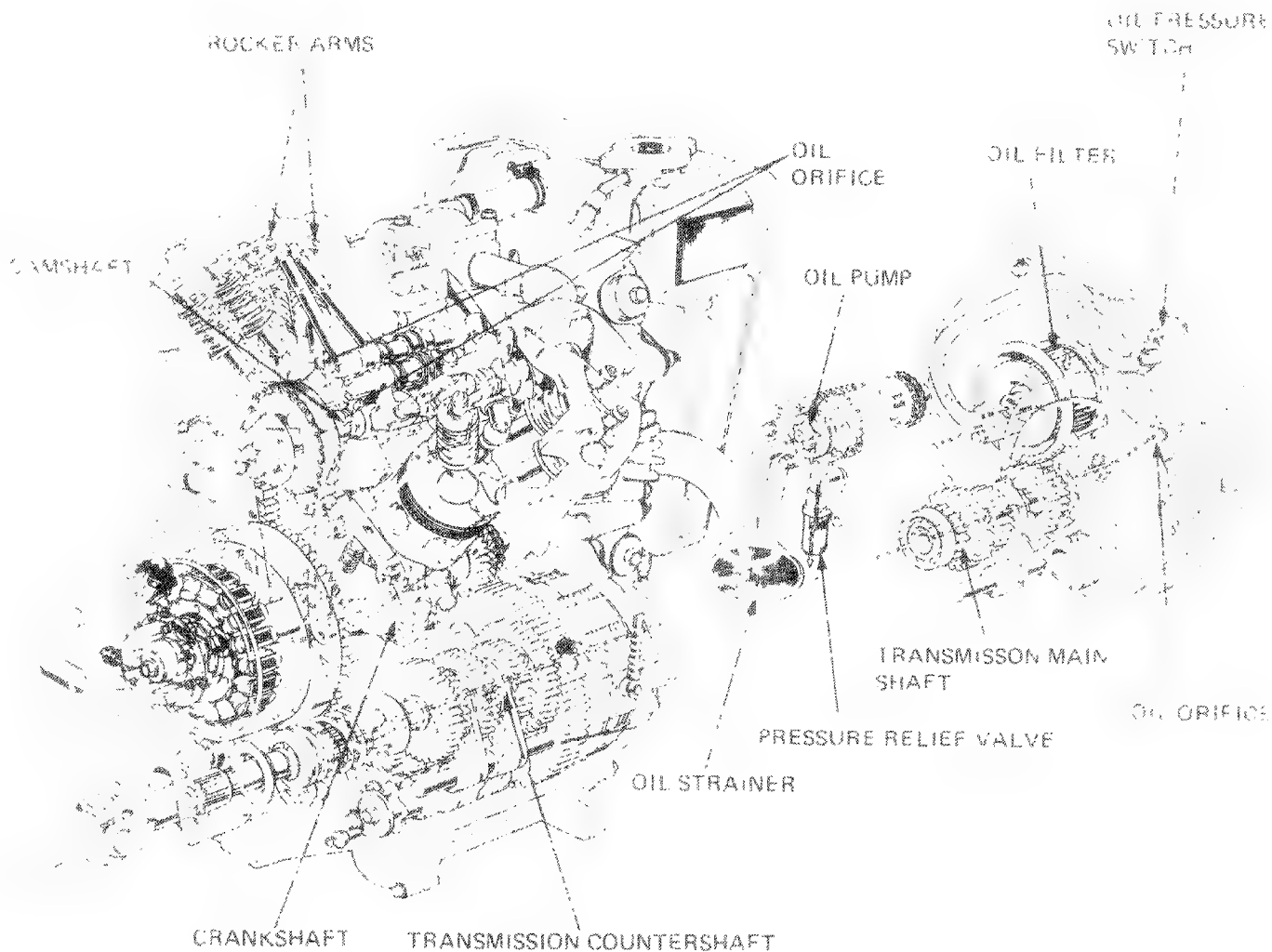
### EMISSION CONTROL INFORMATION LABEL







LUBRICATION DIAGRAM



|                                  |     |
|----------------------------------|-----|
| SERVICE INFORMATION              | 2-1 |
| TROUBLESHOOTING                  | 2-1 |
| ENGINE OIL LEVEL CHECK           | 2-2 |
| ENGINE OIL & OIL FILTER CHANGE   | 2-2 |
| FINAL GEAR OIL CHECK/REPLACEMENT | 2-3 |
| DRIVE SHAFT JOINT                | 2-3 |
| CONTROL CABLE LUBRICATION        | 2-3 |
| LUBRICATION POINTS               | 2-4 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

Oil pump  
Oil pressure relief valve  
Oil filter

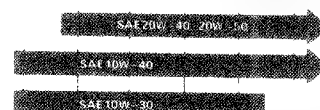
Refer to Section 7  
Refer to Section 7.  
Refer to Section 7.

### SPECIFICATIONS

Engine oil

|                    |                                                                                                                                                                                                                                          |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Oil capacity       | 2.5 lit (2.6 US qt, 2.2 Imp qt) at change<br>3.0 lit (3.2 US qt, 2.6 Imp qt) at disassembly                                                                                                                                              |
| Oil recommendation | Use HONDA 4-STROKE OIL or equivalent<br>API SERVICE CLASSIFICATION SE<br>VISCOSITY:<br>SAE 10W-40<br><br>Other viscosities shown in the chart may be used when the average temperature in your riding area is within the indicated range |
| Oil pump delivery  | 9.3 - 9.5 lit/min at 3,000 rpm                                                                                                                                                                                                           |

#### OIL VISCOSITIES



### Final drive gear

|                 |                                                                       |
|-----------------|-----------------------------------------------------------------------|
| Oil capacity    | 160 - 180 cc (5.4 - 6.1 oz)                                           |
| Recommended oil | Hypoid gear oil<br>Above 5°C (41°F) SAE 90<br>Below 5°C (41°F) SAE 80 |

## TROUBLESHOOTING

### Oil Level Too Low

1. Normal oil consumption
2. External oil leaks
3. Worn piston rings

### Oil Contamination

1. Oil filter not changed often enough
2. Defective head gasket

### Low Oil Pressure

1. Faulty warning light switch
2. Pressure relief valve stuck open
3. Plugged oil pickup screen
4. Oil pump worn

### High Oil Pressure

1. Pressure relief valve stuck closed
2. Plugged oil filter, gallery, or metering orifice
3. Incorrect oil being used

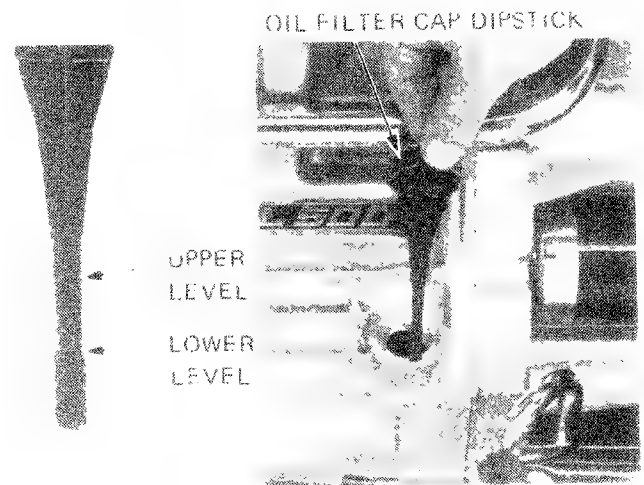
### No Oil Pressure

1. Oil level too low
2. Oil pump drive chain broken
3. Faulty oil pump

## LUBRICATION

## ENGINE OIL LEVEL CHECK

When the eye is closed, the entire scalp (Crew) is covered by the cap, caplets and 2-3 caplets are rolled in the cap, wetting this caplet with eye. Before the eye, eye mark on the caplet is the caplet, eye mark, eye the eye mark.



## ENGINE OIL & OIL FILTER CHANGE

...the ... ..  
... ..  
... ..  
... ..  
... ..

... we are a plug to draw oil from the reserve

...the engine for 2-3 seconds to start.

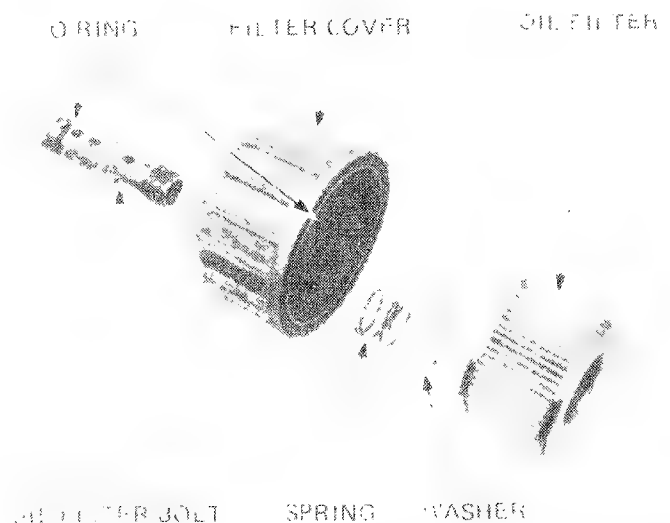
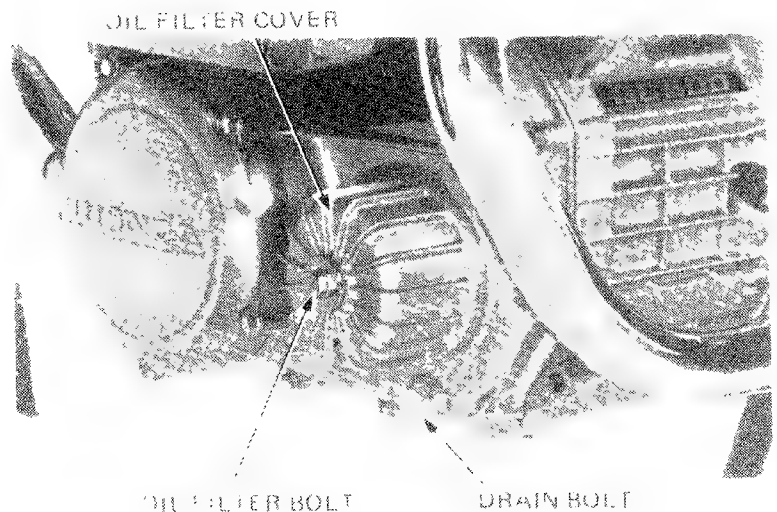
As a result of this, had one entered the old temple, one would have been able to see the operation of the mechanism in the different parts of the temple, and to determine and enlighten the

There is a lot of talk on the Internet about the "average" age of a person's Google search.

TORQUE: 20-25 N·m  
2.0-2.5 kg·m, 14-18 ft·lb.

For the same reason, casing casing in good condition  
may be 20 feet (20) 15 at the  
bottom.

1. 100% SE (100% SE)  
 2. 100% SE (100% SE)  
 3. 100% SE (100% SE)  
 4. 100% SE (100% SE)

[illegible]





## FINAL GEAR OIL CHECK/REPLACEMENT

### OIL LEVEL CHECK

Place the motorcycle on its center stand.

Remove the oil filler cap.

Check that the final gear case is filled up to the correct level. If not, add oil to the filler cap hole.

### NOTE

1. Turn the oil level check for level. Point to the oil level mark through the oil filler opening until it reaches the lower edge of the opening.

### OIL REPLACEMENT

Remove the oil filler cap.

Remove the drain bolt to drain all oil from the final gear case.

Reinsert the drain bolt securely.

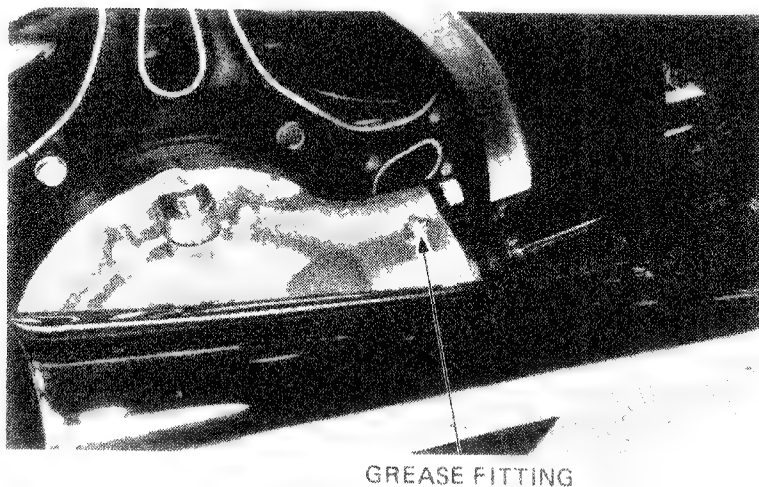
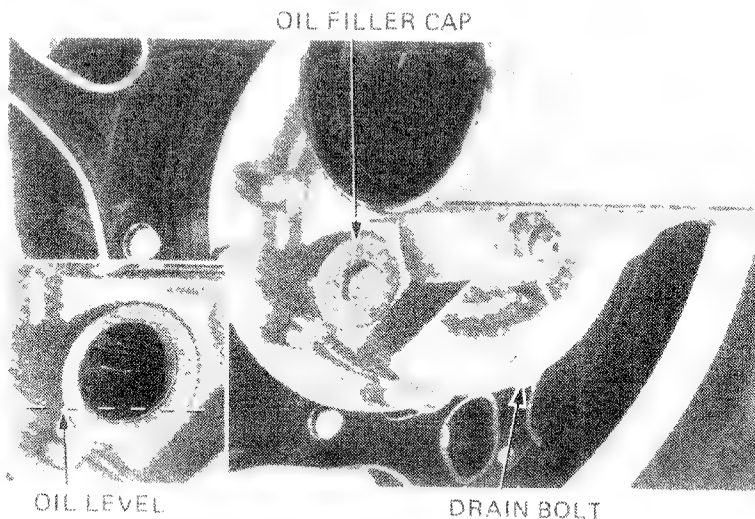
Fill the gear case with the recommended oil up to the correct level.

**OIL CAPACITY** 160-180 cc (5.4-6.1 oz)

**RECOMMENDED OIL** HYPOID GEAR OIL

SAE 90 (Above 5 C/41 F)

SAE 80 (Below 5 C/41 F)



## DRIVE SHAFT JOINT

Apply approx. 10gr. (20 cc 1.2 cu-in) lithium based MULTIPURPOSE NLGI No. 2 (with molybdenum disulfide-MoS<sub>2</sub>-additive) GREASE through the drive shaft joint grease fitting.

### NOTE

Use lithium based MULTIPURPOSE grease with MoS<sub>2</sub>-additive as follows:

• MOLYKOTE-2 BR2-S manufactured by Dow Corning, U.S.A.

MULTIPURPOSE M 2 manufactured by Shin-Etsu Co., Japan.

or equivalents of equivalent quality.

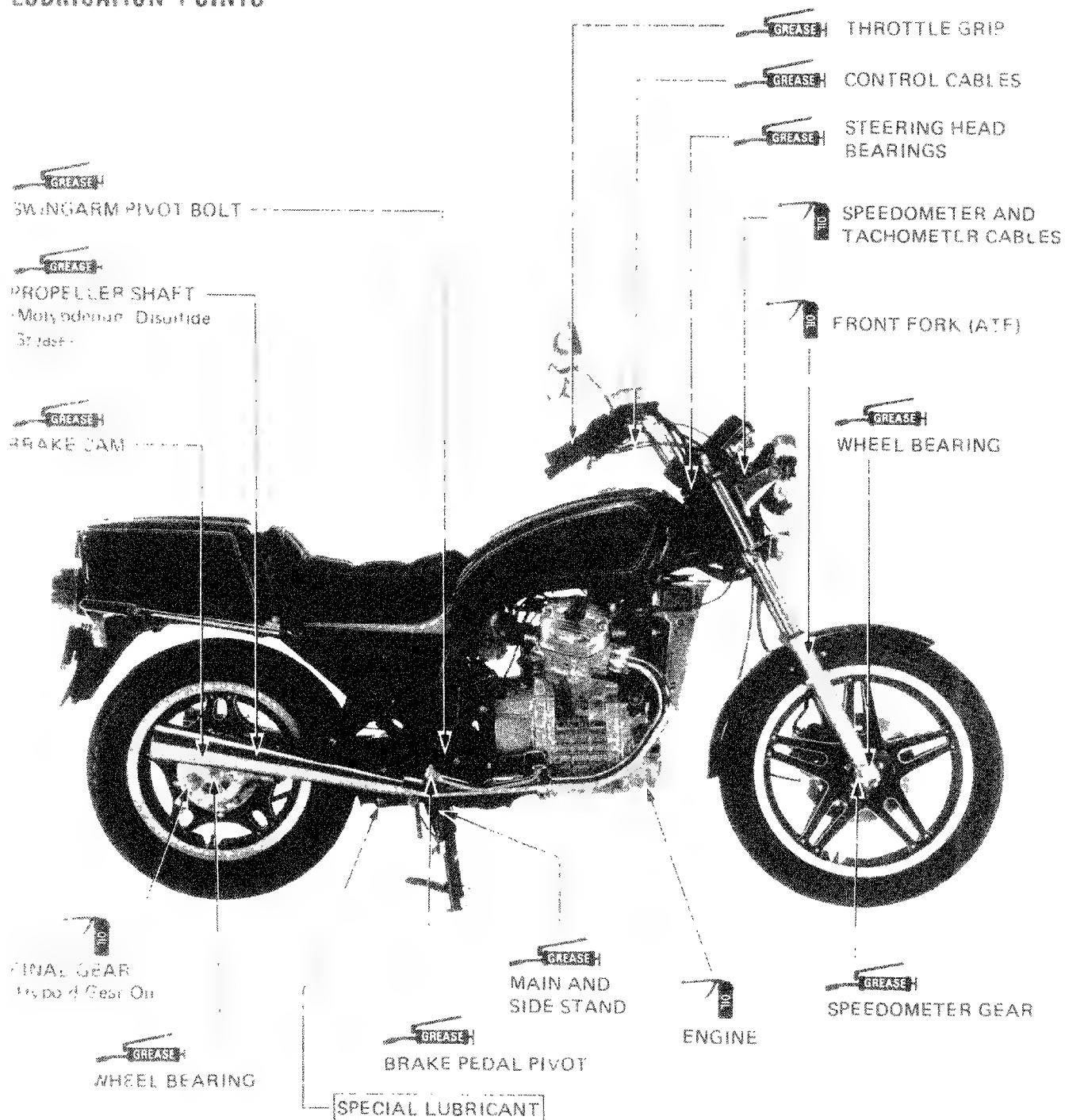
## CONTROL CABLE LUBRICATION

Thoroughly lubricate the throttle and clutch cables at their upper ends.

Thoroughly lubricate the cables and their pivot points with a commercially available cable lubricant.



## LUBRICATION POINTS



- SHOCK ABSORBER UPPER MOUNT BUSHINGS (page 14-26)
- SUSPENSION LINKAGE PIVOTS (page 14-26)

# 3. MAINTENANCE

|                            |      |                        |      |
|----------------------------|------|------------------------|------|
| SERVICE INFORMATION        | 3-1  | COOLING SYSTEM HOSES   | 3-11 |
| MAINTENANCE SCHEDULE       | 3-3  | CHASSIS                |      |
| ENGINE                     |      | BATTERY                | 3-11 |
| FUEL LINES                 | 3-4  | BRAKE FLUID            | 3-11 |
| THROTTLE OPERATION         | 3-4  | BRAKE SHOE/PAD WEAR    | 3-12 |
| CARBURETOR CHOKE           | 3-5  | BRAKE SYSTEM           | 3-12 |
| AIR CLEANER                | 3-5  | BRAKELIGHT SWITCH      | 3-13 |
| CRANKCASE BREATHER         | 3-6  | HEADLIGHT AIM          | 3-13 |
| SPARK PLUGS                | 3-7  | CLUTCH                 | 3-14 |
| VALVE CLEARANCE            | 3-7  | SIDE STAND             | 3-14 |
| CAM CHAIN TENSION          | 3-9  | SUSPENSION             | 3-15 |
| CARBURETOR-SYNCHRONIZATION | 3-9  | NUTS, BOLTS, FASTENERS | 3-16 |
| CARBURETOR IDLE SPEED      | 3-10 | WHEELS                 | 3-16 |
| RADIATOR COOLANT           | 3-10 | STEERING HEAD BEARINGS | 3-17 |
| RADIATOR CORE              | 3-10 |                        |      |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

|                   |              |
|-------------------|--------------|
| Engine oil        | See page 2-2 |
| Engine oil filter | See page 2-2 |
| Transmission oil  | See page 2-3 |
| Clutch oil        | See page 2-3 |

### Tools

#### Special

|                             |                                               |
|-----------------------------|-----------------------------------------------|
| Oil level gauge             | 07404-0020000 or M937B (071 XXXXX (USA only)) |
| Clutch cable tension wrench | 07908-4600200                                 |

#### Common

|                    |               |               |
|--------------------|---------------|---------------|
| Wrench, 10 x 12 mm | 07708-0030200 | 07908-3640000 |
| Wrench, 10 x 12 mm | 07708-0030400 |               |

## SPECIFICATIONS

### Engine

Spark plug Recommended spark plug

GL500, GL500i

For optional radio

|            | Standard | For extended high speed riding | Standard | For extended high speed riding |
|------------|----------|--------------------------------|----------|--------------------------------|
| Spark plug | D8EA     | D9FA                           | DR8ES-L  | DR8ES                          |
| Spark plug | X24ES-U  | X27ES-U                        | X24ESR-U | X27ESR-U                       |

Engine oil 10W-40 (10W-40) (10W-40) (10W-40)

### Engine oil

|            |                                   |
|------------|-----------------------------------|
| Engine oil | 15W-40 (10W-40) (10W-40) (10W-40) |
| Engine oil | 15W-40 (10W-40) (10W-40) (10W-40) |
| Engine oil | 15W-40 (10W-40) (10W-40) (10W-40) |
| Engine oil | 15W-40 (10W-40) (10W-40) (10W-40) |
| Engine oil | 15W-40 (10W-40) (10W-40) (10W-40) |
| Engine oil | 15W-40 (10W-40) (10W-40) (10W-40) |
| Engine oil | 15W-40 (10W-40) (10W-40) (10W-40) |
| Engine oil | 15W-40 (10W-40) (10W-40) (10W-40) |
| Engine oil | 15W-40 (10W-40) (10W-40) (10W-40) |
| Engine oil | 15W-40 (10W-40) (10W-40) (10W-40) |



## MAINTENANCE

### WEAR

new brake pads free play 20 - 30 mm (3/4 - 1 1/4 in)

### Tires

| Tire size                              |                                               | Front         | Rear          |
|----------------------------------------|-----------------------------------------------|---------------|---------------|
| Load carrying capacity<br>(kg and lbs) | Up to 90 kg (200 lbs) load                    | 150S 19-4PR   | 130-90 16 6/S |
|                                        | 90 kg (200 lbs) load to vehicle capacity load | 200 (2.0, 28) | 200 (2.0, 28) |
|                                        | 90 kg (200 lbs) load to vehicle capacity load | 200 (2.0, 28) | 250 (2.5, 36) |
| Manufacturer                           | BRIDGESTONE                                   | L303          | S714          |
|                                        | DUNLOP                                        | F11           | K127          |

|                    |            |                                                            |
|--------------------|------------|------------------------------------------------------------|
| Inflation pressure | Front      | 80 - 120 kPa (0.8 - 1.2 kg/cm <sup>2</sup> , 11 - 17 psi)  |
|                    | Rear GL500 | 0 - 500 kPa (0 - 5.0 kg/cm <sup>2</sup> , 0 - 70 psi)      |
|                    | GL500I     | 100 - 500 kPa (1.0 - 5.0 kg/cm <sup>2</sup> , 14 - 70 psi) |



## MAINTENANCE SCHEDULE

Perform the PRE-RIDE INSPECTION in the Owner's Manual at each scheduled maintenance period.

INSPECT AND CLEAN, ADJUST, LUBRICATE, OR REPLACE IF NECESSARY.

- 1. CLEAN
- 2. REPLACE
- 3. ADJUST
- 4. LUBRICATE

| ITEM                   | FREQUENCY          | WHICHEVER OCCURS FIRST | ODOMETER READING NOTE (3) |                        |                        |                        |                        |                        |                        |                        | REFER TO PAGE |
|------------------------|--------------------|------------------------|---------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|---------------|
|                        |                    |                        | 500 mi<br>(800 km)        | 1,000 mi<br>(1,600 km) | 1,500 mi<br>(2,400 km) | 2,000 mi<br>(3,200 km) | 2,500 mi<br>(4,000 km) | 3,000 mi<br>(4,800 km) | 3,500 mi<br>(5,600 km) | 4,000 mi<br>(6,400 km) |               |
| FUEL LINES             | EVERY              |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-4           |
| THROTTLE OPERATION     |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-4           |
| CARBURETOR CHOKE       |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-5           |
| AIR CLEANER            | NOTE (1)           |                        | C                         | R                      | C                      | R                      | C                      | R                      | C                      | R                      | 3-5           |
| CHASSIS CASE BREATHER  | NOTE (2)           |                        | C                         | C                      | C                      | C                      | C                      | C                      | C                      | C                      | 3-6           |
| SPARK PLUGS            |                    |                        | R                         | R                      | R                      | R                      | R                      | R                      | R                      | R                      | 3-7           |
| VALVE CLEARANCE        |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-7           |
| ENGINE OIL             | YEAR               |                        | R                         |                        | R                      |                        | H                      |                        |                        | R                      | 2-2           |
| ENGINE OIL FILTER      | YEAR               |                        |                           | R                      |                        |                        | R                      |                        |                        | R                      | 2-2           |
| CLAY CHAIN TENSION     |                    |                        | A                         | A                      | A                      | A                      | A                      | A                      | A                      | A                      | 3-9           |
| CARBURETOR SYNCHRONIZE |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-9           |
| CARBURETOR IDLE SPEED  |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-10          |
| RADIATOR COOLANT       |                    |                        |                           |                        |                        |                        |                        |                        |                        | R                      | 3-10          |
| RADIATOR CORE          |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-10          |
| COOLING SYSTEM HOSES   |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-11          |
| DRIVE SHAFT JOINT      |                    |                        |                           |                        | L                      |                        | L                      |                        |                        | L                      | 2-3           |
| FINAL DRIVE LUBRICANT  |                    |                        |                           |                        |                        |                        |                        |                        |                        | R                      | 2-3           |
| BATTERY                | MONTH              |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-11          |
| BRAKE FLUID (FRONT)    | MONTH<br>2 YEARS R |                        |                           |                        |                        |                        |                        |                        |                        | *R                     | 3-11          |
| BRAKE SHOE/PAD WEAR    |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-12          |
| BRAKE SYSTEM (REAR)    |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-12          |
| BRAKE LIGHT SWITCH     |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-13          |
| HEADLIGHT A.M.         |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-13          |
| CLUTCH                 |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-14          |
| SLIDE STAND            |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-14          |
| SUSPENSION             |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-15          |
| NUTS/BOLTS FASTENERS   |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-16          |
| WHEELS                 |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-16          |
| STEERING HEAD BEARING  |                    |                        |                           |                        |                        |                        |                        |                        |                        |                        | 3-17          |

SHOULD BE SERVICED BY AN AUTHORIZED HONDA DEALER, UNLESS THE OWNER HAS PROPER TOOLS AND SERVICE DATA AND IS MECHANICALLY QUALIFIED.

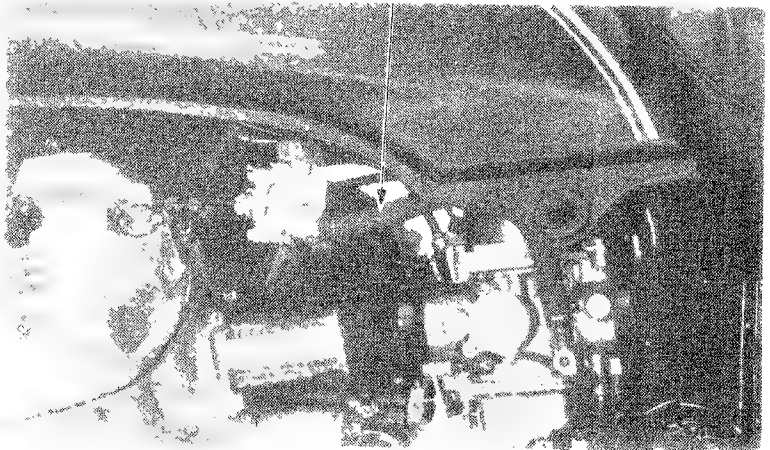
IN THE INTEREST OF SAFETY, WE RECOMMEND THESE ITEMS BE SERVICED ONLY BY AN AUTHORIZED HONDA DEALER.

- NOTES: (1) SERVICE MORE FREQUENTLY WHEN RIDING IN DUSTY AREAS.  
(2) SERVICE MORE FREQUENTLY WHEN RIDING IN RAIN OR AT FULL THROTTLE, OR AFTER BEING WASHED OR DROPPED ON ITS SIDE.  
(3) FOR HIGHER ODOMETER READINGS, REPEAT AT THE FREQUENCY INTERVAL ESTABLISHED HERE.

## FUEL LINES

The fuel lines are made of a special material that is resistant to gasoline. They are also resistant to heat and cold. The fuel lines are made of a special material that is resistant to gasoline. They are also resistant to heat and cold.

FUEL LINE



## THROTTLE OPERATION

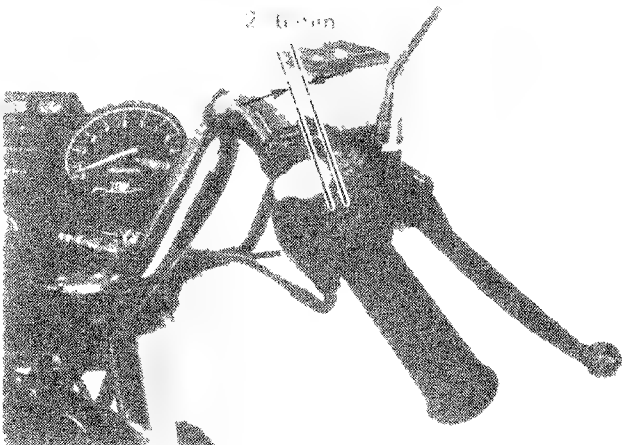
The throttle is a lever that is used to control the engine's speed. It is located on the handlebars and is operated by the rider's right hand. The throttle is a lever that is used to control the engine's speed. It is located on the handlebars and is operated by the rider's right hand.

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2. Throttle

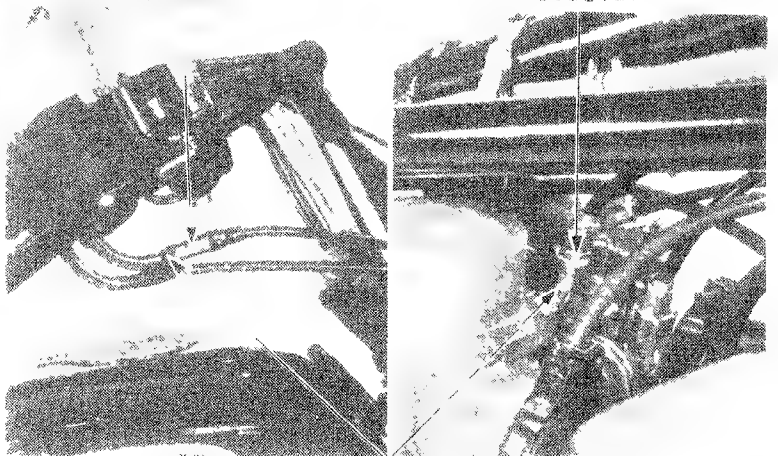


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The throttle is a lever that is used to control the engine's speed. It is located on the handlebars and is operated by the rider's right hand.

UPPER ADJUSTER

LOWER ADJUSTER



LOCK NUT





## CARBURETOR CHOKE

Operate the choke knob and check for smooth operation.

Pull the choke knob up all the way to fully closed. Make sure that the choke valve is fully closed at the carburetors by moving the lever.

To adjust, remove the fuel tank. Loosen the choke cable clamp and move the choke cable casing until the lever is fully closed.

Tighten the clamp, holding the choke lever fully closed.

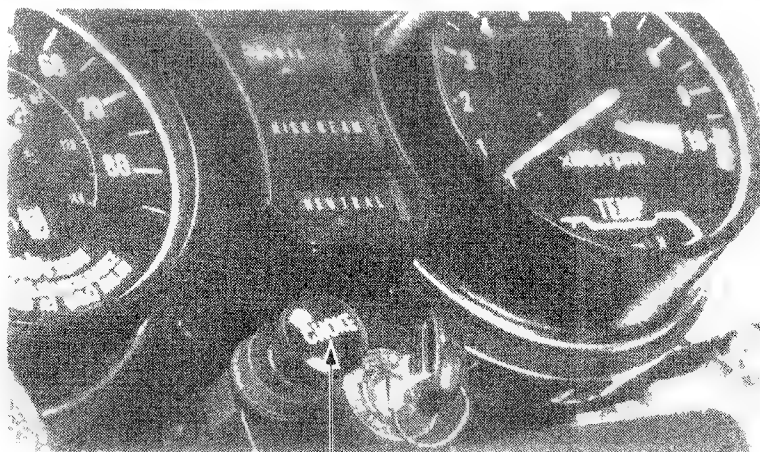
Push the choke knob down all the way to fully open.

Make sure the choke valve is fully open by checking for free play in the cable between the lever and cable casing.

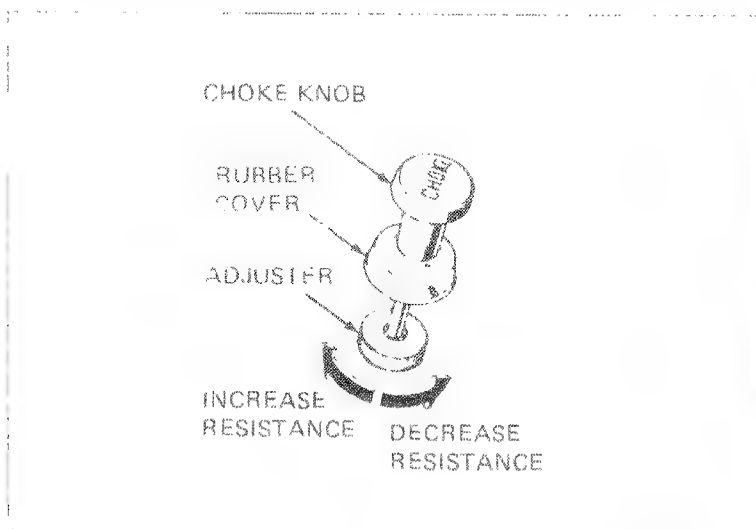
Install the fuel tank.

Adjust the choke operating friction by turning the friction adjuster if necessary.

The choke knob must move smoothly and stay where positioned.



CHOKE KNOB



## AIR CLEANER

Remove the right side cover.

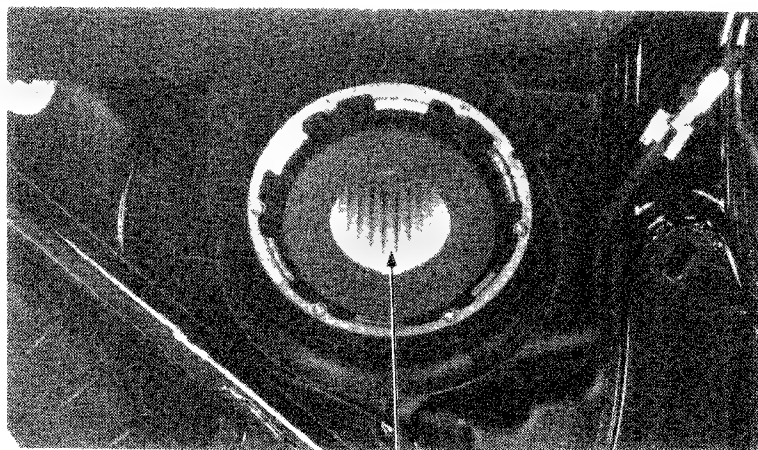
Remove the air cleaner cover by turning it counter-clockwise.



AIR CLEANER COVER



Remove the air cleaner element.



AIR CLEANER ELEMENT

Tap the air cleaner element by tapping it lightly with your fist.

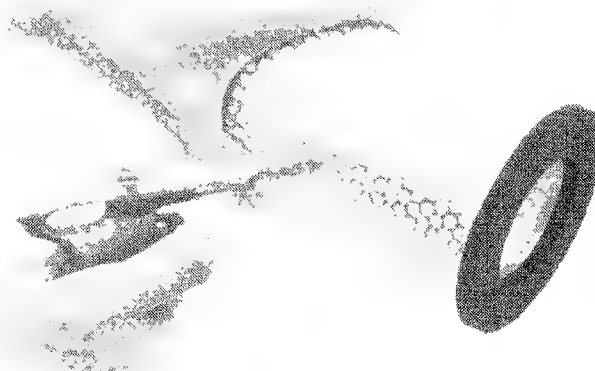
Blow away remaining dust by compressed air from the bottom of the element.

Replace the element if it is excessively dirty, torn or damaged.

NOTE

Install the cover with the "TOP" mark facing the plug.

Install the air filter cover on the right side cover.



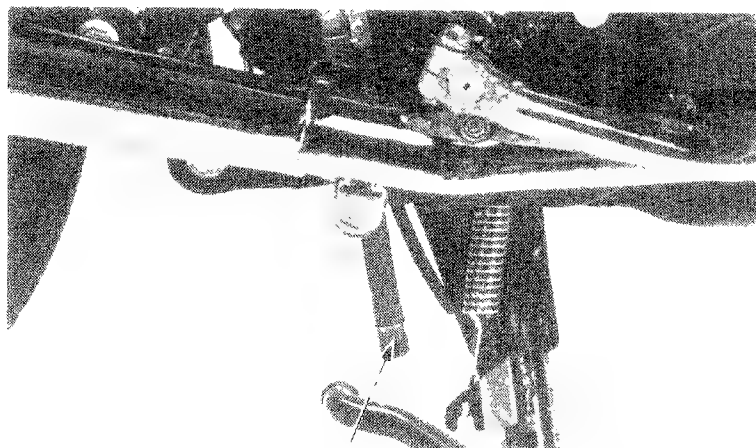
## CRANKCASE BREATHER

Remove the plug from the drain tube to drain the oil.

Remove the drain plug.

NOTE

Service more frequently when ridden in rain or on wet roads or if the deposit level can be seen in the transparent section of the drain tube.



DRAIN PLUG



## SPARK PLUGS

### RECOMMENDED SPARK PLUG

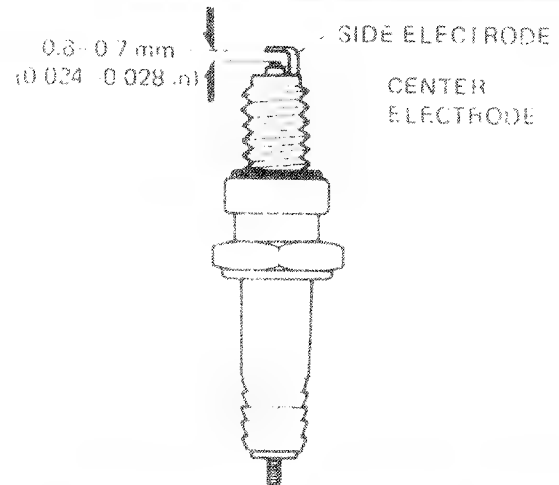
| GL500, GL500i |                                | For optional radio |                                |
|---------------|--------------------------------|--------------------|--------------------------------|
| Standard      | For extended high speed riding | Standard           | For extended high speed riding |
| NGK D8EA      | D9EA                           | DR8ES-U            | DR8ES                          |
| JP X24ES-U    | X27ES-U                        | X24ESR-U           | X27ESR-U                       |

1. Carefully cut from around the spark plug base to remove the spark plug cap.
2. Remove and discard the spark plug.
3. Measure the new spark plug gaps using a wire type feeler gauge.

#### SPARK PLUG GAP

0.6-0.7 mm (0.024-0.028 in.)

4. Without bending the side electrode carefully insert the plug washer attached, thread the spark plug carefully and to prevent cross-threading.
5. Tighten the spark plug another 1/2 turn with a spark plug wrench to compress the plug washer against the spark plug tips.

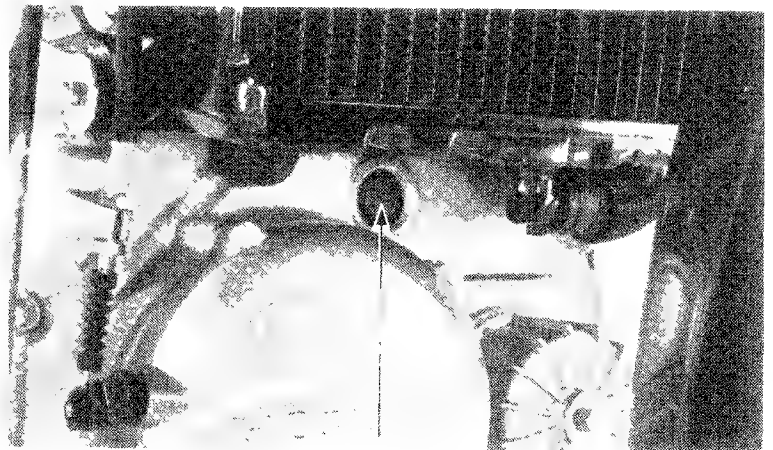


## VALVE CLEARANCE

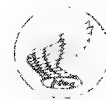
### NOTE

Valve inspection and adjustment must be performed while the engine is cold (below 35°C).

1. Remove the radiator cover.
2. Remove the crankshaft hole cap from the transmission cover and the timing inspection hole cap from the rear cover.
3. Remove the spark plug caps.
4. Remove the cylinder head covers.



CRANKSHAFT



## MAINTENANCE

Turn the crankshaft clockwise so that the "TL" mark on the crankshaft is aligned with the index mark. The left piston is now at the T.D.C. of the compression stroke.

Turn the crankshaft clockwise a clearance of the timing chain by inserting a feeler gauge between the camshaft adjusting screw and valve stem.

### VALVE CLEARANCE

- Inlet Valve . . . 0.08 mm (0.003 in.)
- Exhaust Valve . . . 0.11 mm (0.004 in.)

Loosen the lock nut, turn the camshaft clockwise and align the "TL" mark on the crankshaft with the index mark. The right piston is now at the T.D.C. of the compression stroke.

Turn the crankshaft clockwise and align the "TR" mark on the crankshaft with the index mark. The right piston is now at the T.D.C. of the compression stroke.

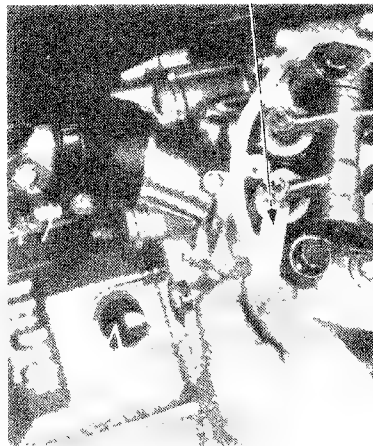
Check the intake and exhaust valve clearance of the right cylinder as described for the left cylinder.

Reinstall the removed parts in the reverse order of assembly.

### SPARK

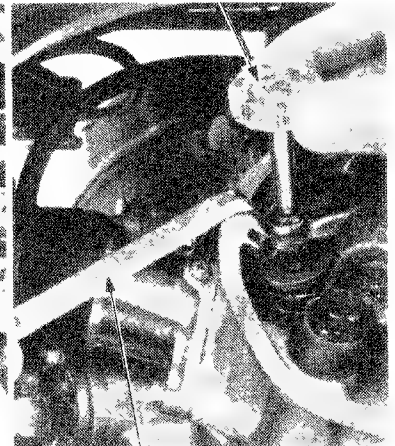
- 1. Coat the cylinder head cover bolt rubbers with oil before tightening.

### FEELER GAUGE



TIMING INSPECTION  
HOLE

### VALVE ADJUSTER 07908-3640000



VALVE ADJUSTING  
WRENCH 10 x 12 mm

### INDEX MARK

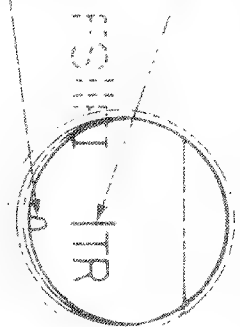
### TL MARK



T.D.C. OF THE LEFT CYLINDER

### INDEX MARK

### TR MARK



T.D.C. OF THE RIGHT  
CYLINDER

### CYLINDER HEAD COVER



TIMING  
INSPECTION CAP

SPARK PLUG  
CAP



# HONDA

GL500

GL500 INSTRUCTIONS

WALL - ENANG

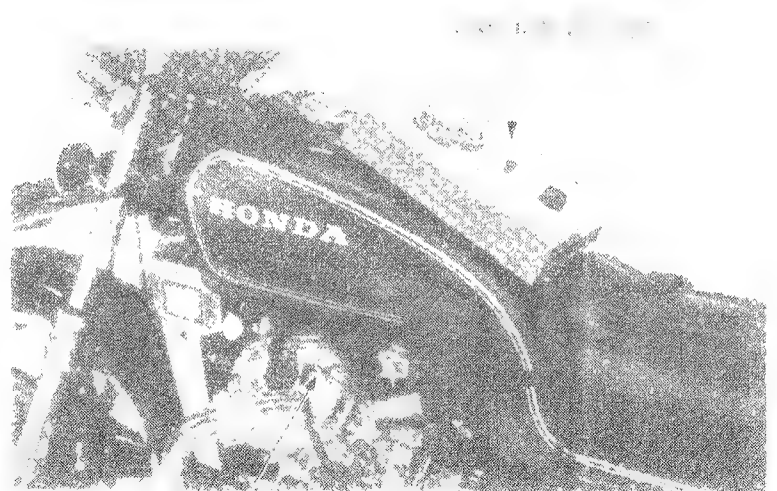
## CAM CHAIN TENSION

Remove the left cylinder head cover.  
Remove the crankshaft and timing roller caps from the transmission and rear covers respectively.  
Slowly turn the crankshaft clockwise until the rotor (2) marks into the index mark. Be sure the left piston is at T.D.C. of the compression stroke.  
Loosen the cam chain tensioner lock bolt.  
Turn this bolt clockwise to the cam chain tensioner until it reaches its position and then tighten the lock bolt.  
Reinstall the crankshaft and timing roller caps.  
Reinstall the left cylinder head cover.

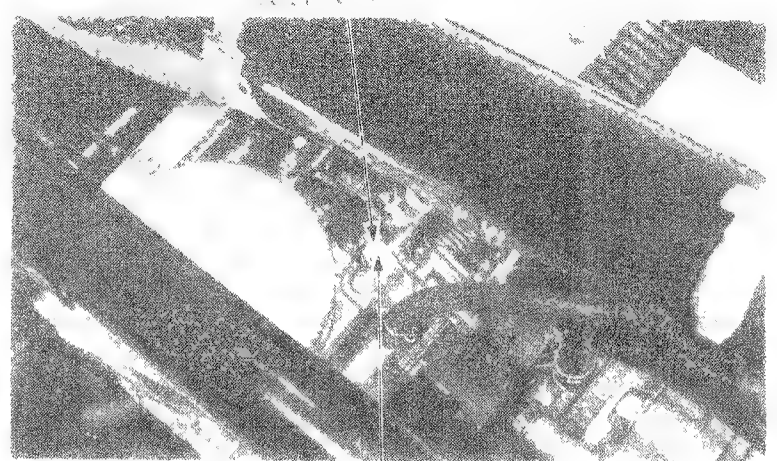


## CARBURETOR SYNCHRONIZATION

Tools:  
This adjustment is performed with engine at normal operating temperature, transmission in neutral and vehicle on center stand.  
Remove the plugs from the carburetor spacers and install adapters.  
Connect the vacuum gauges.  
Start the engine and adjust the idle speed to 1150  $\pm$  100 rpm.  
Adjust the vacuum between cylinders to within 4 mm (1.6 in) Hg.



Tools:  
Adjust the vacuum between cylinders to within 4 mm (1.6 in) Hg of each other, by turning the adjusting screw with tool 07908-4600200.  
Hold adjusting screw, and tighten the lock nut.  
Recheck the synchronization and idle speed.  
Install the carburetor spacer plugs.  
Install the fuel tank and seat.







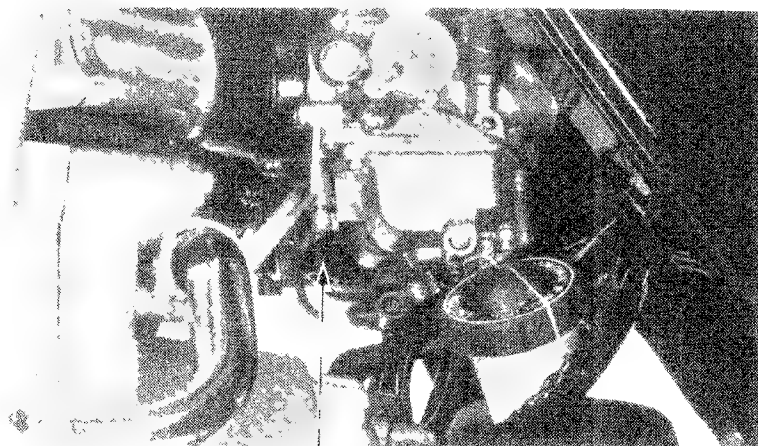
## CARBURETOR-IDLE SPEED

### NOTE:

The engine must be warm for accurate idle speed, after 10 minutes of stop and go driving to warm it up, or when the temperature gauge reads in the wide white line.

When in the shop, place the transmission in neutral and the motorcycle on its center stand. Turn the speed in the throttle stop screw.

**IDLE SPEED: 1100 ± 100 rpm**



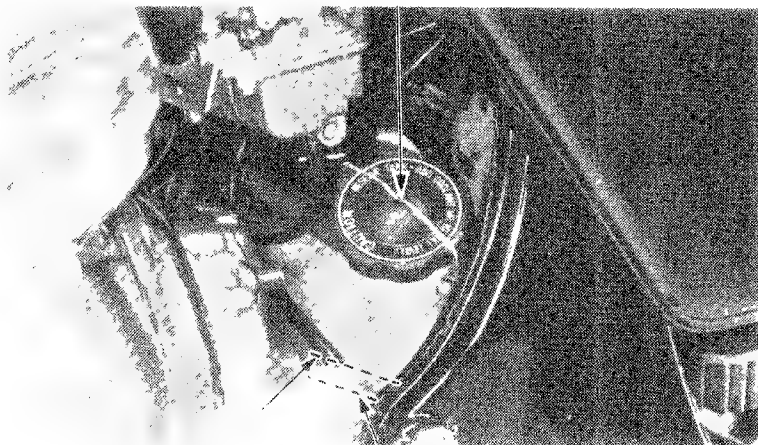
THROTTLE STOP SCREW

## RADIATOR COOLANT

Check the coolant level of the reserve tank with the engine running at normal operating temperature. The level should be between the "FULL" and "LOW" marks.

To refill, remove the reserve tank cap and fill to the "FULL" level line.

RESERVE TANK CAP



"FULL" MARK

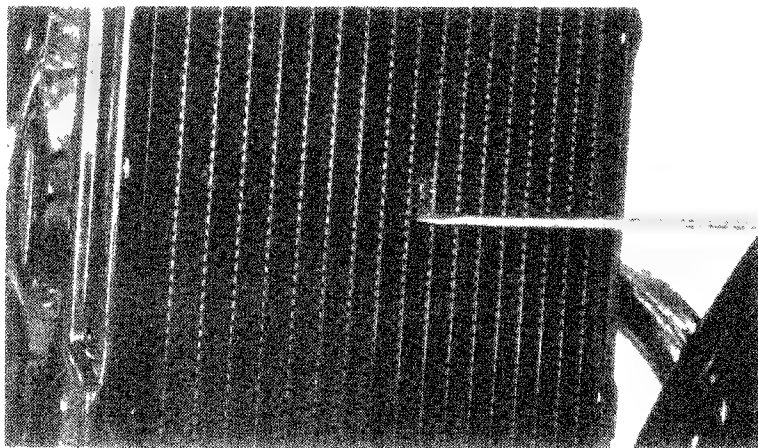
"LOW" MARK

## RADIATOR CORE

Check the air passages for clogging or damage to the coolant fins.

Remove insects, mud or any obstruction with compressed air or low water pressure.

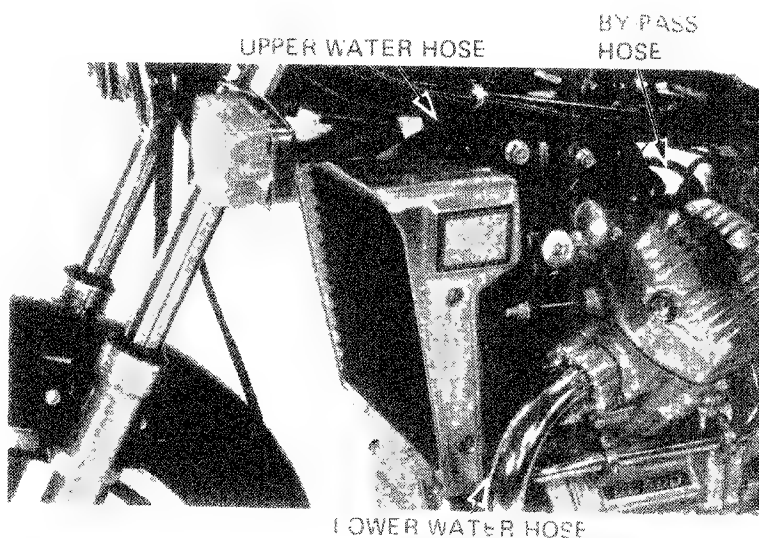
Replace the radiator if the air flow is restricted over more than 20% of the radiating surface.





## COOLING SYSTEM HOSES

Inspect the hoses for cracks or deterioration, and replace if necessary.  
Check the hose clamps, and tighten if necessary.



## BATTERY

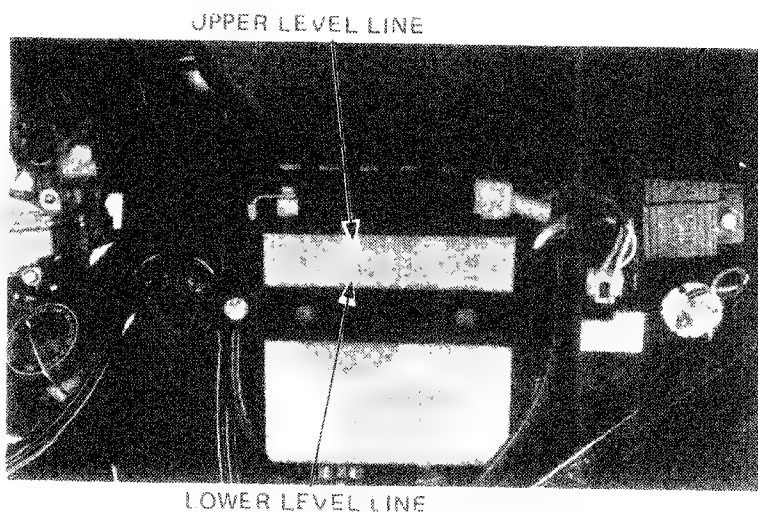
Remove the left side cover.  
Inspect the battery electrolyte level.  
If the electrolyte level nears the lower level mark, fill with distilled water to the upper level mark.  
If sulfation forms on the battery walls or sediments (paste) accumulate on the bottom of the battery, replace the battery.

### NOTE

Add only distilled water. Tap water will shorten the service life of the battery.

### WARNING

*The battery electrolyte contains sulfuric acid. Protect your eyes, skin and clothing. In case of contact, flush thoroughly with water and call a doctor if electrolyte gets in your eyes.*

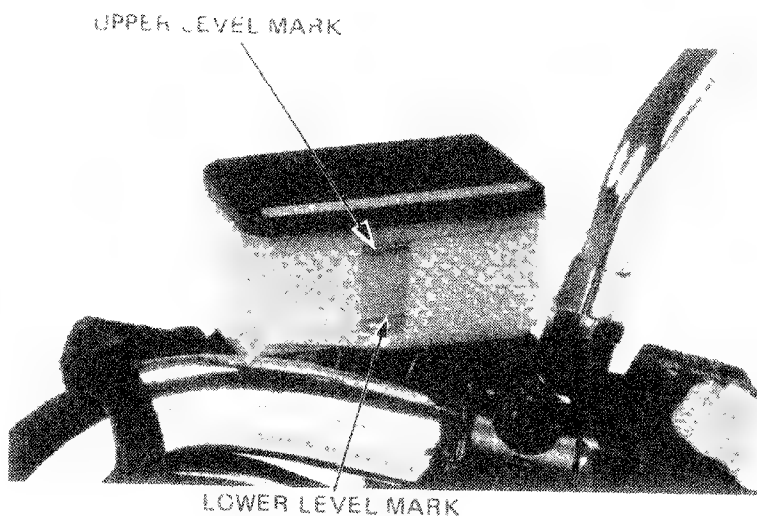


## BRAKE FLUID

Check the front brake fluid reservoir level.  
If the level nears the lower level mark, fill the reservoir with SAE J1703 or DOT -3 BRAKE FLUID to the upper level mark.  
Check the entire system for leaks, if the level is low.

### CAUTION

- Do not remove the cover until the handlebar has been tuned so that the reservoir is level.
- Avoid operating the brake lever with the cap removed. Brake fluid will squirt out if the lever is pulled.
- Do not mix different types of fluid, as they are not compatible.



## BRAKE SHOE/PAD WEAR

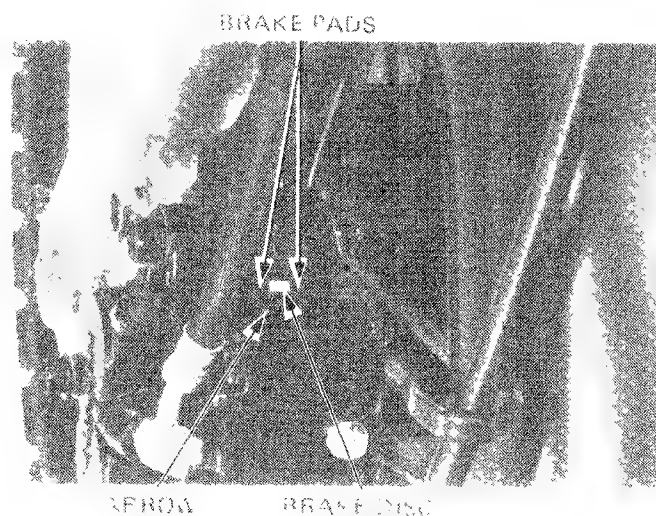
### BRAKE PAD WEAR

Check the brake pads for wear by looking through the slot indicated by the arrow cast on the caliper assembly.

Replace the brake pads if the wear line on the pads reaches the edge of the brake disc (refer to page 3-12).

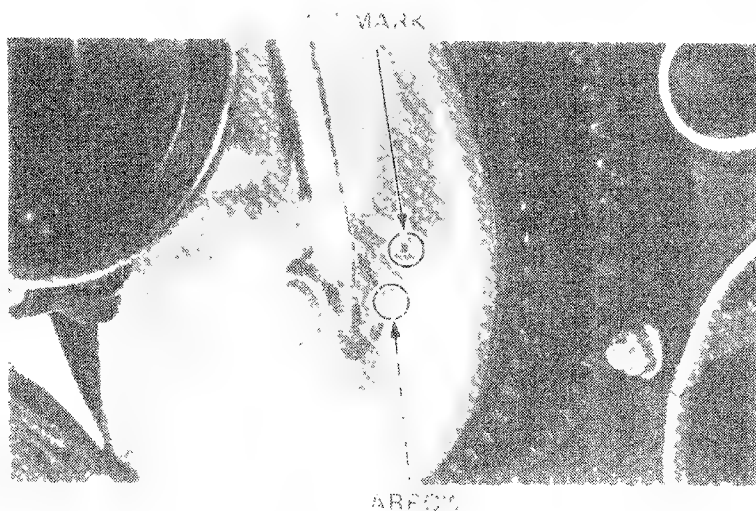
#### CAUTION

*Do not oil the brake pads or parts of the brake disc by hand.*



### BRAKE SHOE INSPECTION (WEAR INDICATOR)

Replace the brake shoes if the arrow on the brake shoe aligns with the reference mark "A" on full application of the rear brake.



## BRAKE SYSTEM

### BRAKE SYSTEM HOSE

Check the condition of the brake hoses and deterioration of the brake hose in the brake system for leaks.

### BRAKE PEDAL HEIGHT

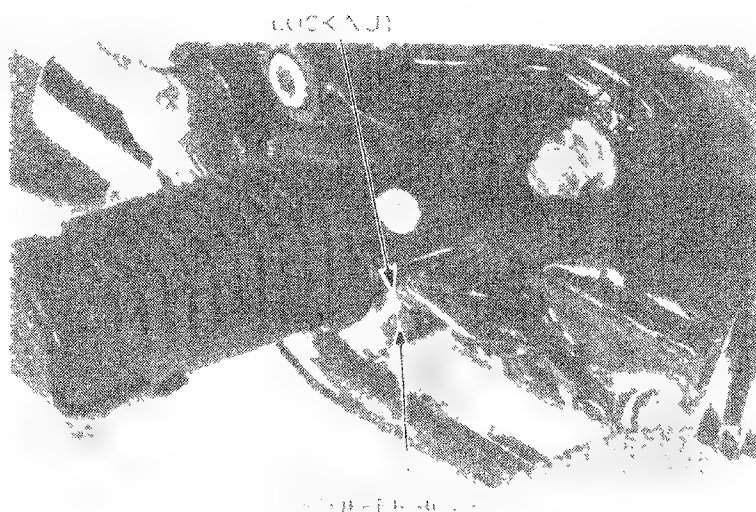
Adjust the brake pedal.

Adjust the brake pedal height by turning the stop screw.

Refer to the following.

#### NOTE

After adjusting the brake pedal height, check the brake pedal height with an input device.



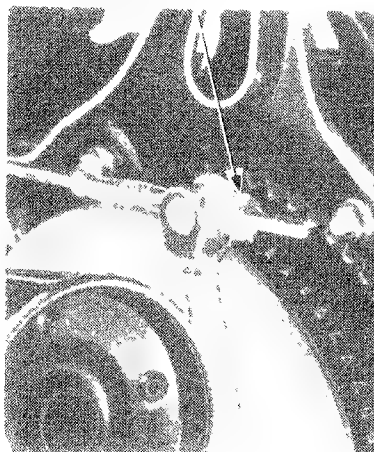
## REAR BRAKE PEDAL FREE PLAY

Adjust the rear brake pedal free play.

**FREE PLAY** 20–30 mm (3/4–1 1/4 in.)

Adjustment is necessary after the rear brake adjusting nut.

## REAR BRAKE ADJUSTING NUT



## BRAKE LIGHT SWITCH

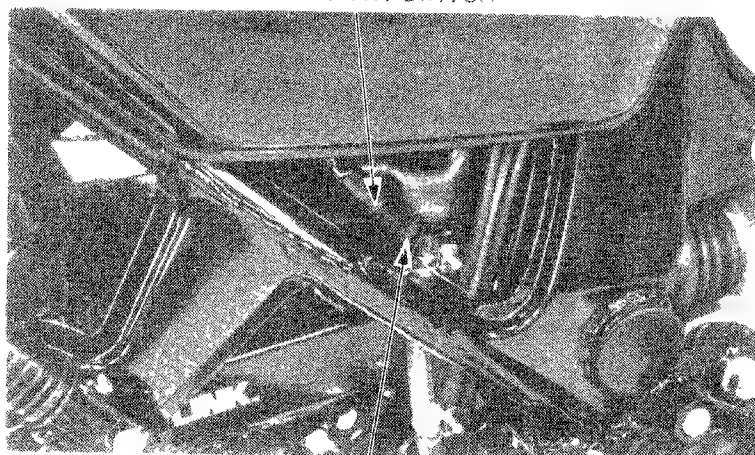
Adjust the brakelight switch so that the brakelight will glow when the brake pedal is depressed 20 mm (3/4 in.) when the brake begins engagement. Adjust by turning the adjusting nut.

1. Turn off the engine.

2. Adjust the brakelight switch adjustment after adjusting brake pedal play and pedal free play.

3. Check the brakelight free play.

## BRAKE LIGHT SWITCH



ADJUSTING NUT

## HEADLIGHT AIM

Adjust the headlight aim by using the headlight aim adjusting screws.

1. Turn off the engine, and turn the adjusting screws clockwise.

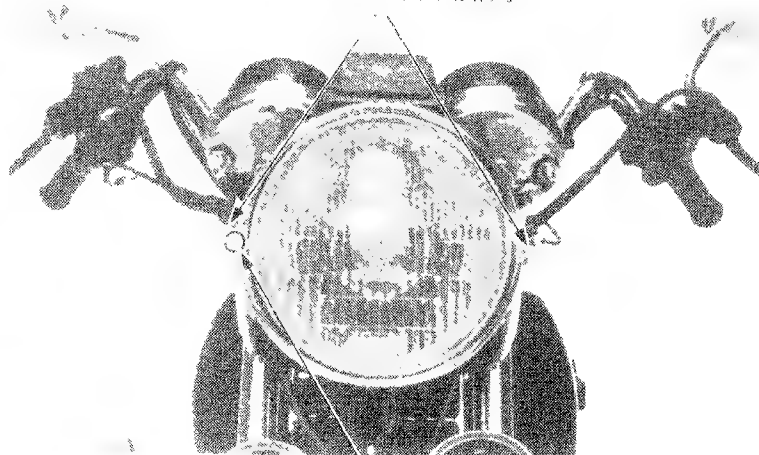
2. Turn the adjusting screws clockwise until the beam is at the right side of the target.

3. Turn the adjusting screws clockwise until the beam is at the right side of the target.

### WARNING

An improperly adjusted headlight may blind an oncoming driver, or it may fail to light the road in a safe manner.

## HEADLIGHT MOUNTING BOLTS



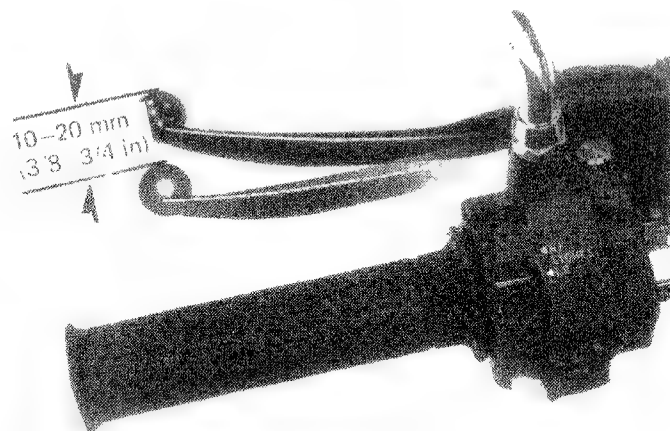
ADJUSTING SCREW



## CLUTCH

Inspect the clutch lever free play at the end of the lever.

**FREE PLAY:** 10 – 20 mm (3/8 – 3/4 in)



Major adjustments should be made using the adjuster located at the clutch housing. Loosen the lock nut and turn the clutch cable adjusting nut. Minor adjustments can be made with the clutch lever adjuster located on the clutch lever. Loosen the lock nut and turn the adjuster.

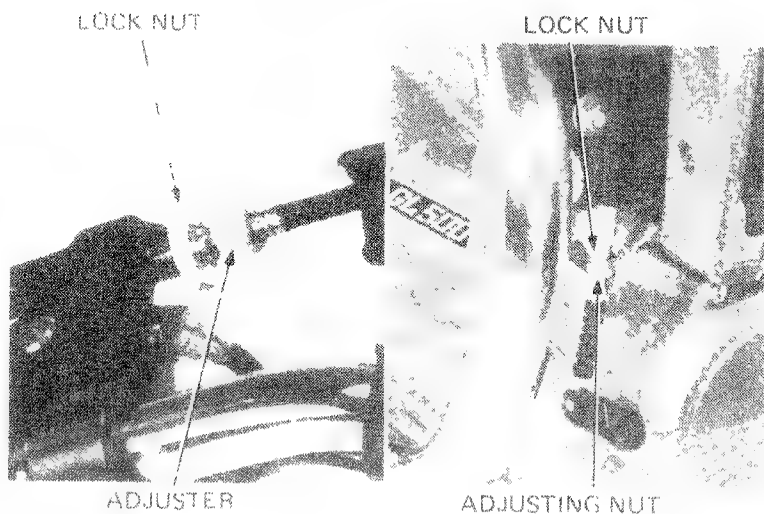
### NOTE

Do not allow the threads at the adjuster to come out by more than 8 mm (0.3 in.).

### WARNING

*Do not burn yourself on the exhaust pipe.*

Recheck the clutch operation.



## SIDE STAND

Check the rubber pad for deterioration or wear. Replace if any wear extends to wear line as shown. Check the side stand spring for damage and loss of pressure and the side stand assembly for freedom of movement and operation.

### NOTE

When loading, use a rubber pad with the load capacity 240 lb. ONLY.

Spring operation is correct if the measurements fall within 2–3 kg (4.4–6.6 lb), when pulling the side stand lower end with a spring scale.

GOOD

NG GOOD  
REPLACE



WEAR LINE



## SUSPENSION

### WARNING

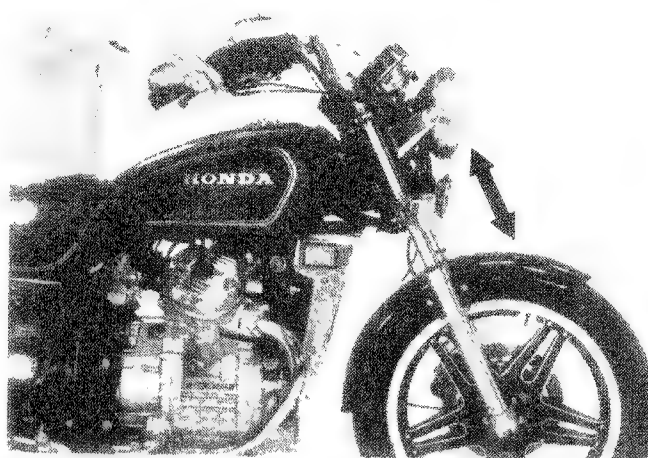
*Do not ride a vehicle with faulty suspension. Loose, worn or damaged suspension parts impair vehicle stability and control.*

### FRONT

Check the action of the front forks by compressing them several times.

Check the entire fork assembly for leaks or damage. Replace damaged components which cannot be repaired.

Tighten all nuts and bolts.



Check the front fork air pressure when the front forks are cold.

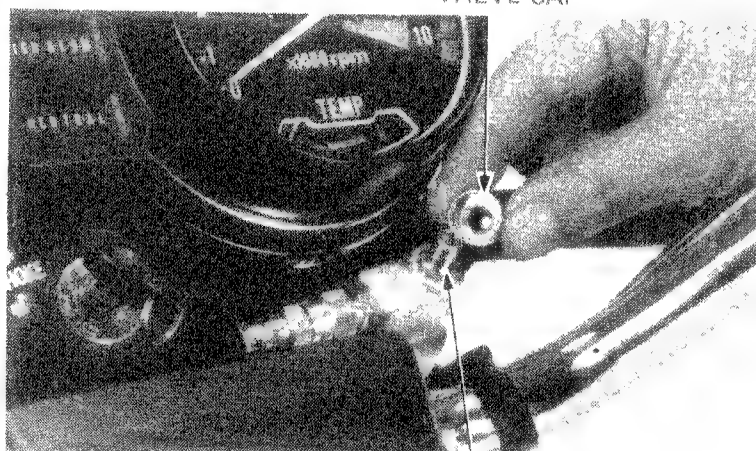
Place the vehicle on its center stand.

Remove the valve cap and measure the front fork air pressure.

### FRONT FORK AIR PRESSURE:

80 – 120 kPa (0.8 – 1.2 kg/cm<sup>2</sup>, 11 – 17 psi)

VALVE CAP



AIR VALVE

### REAR

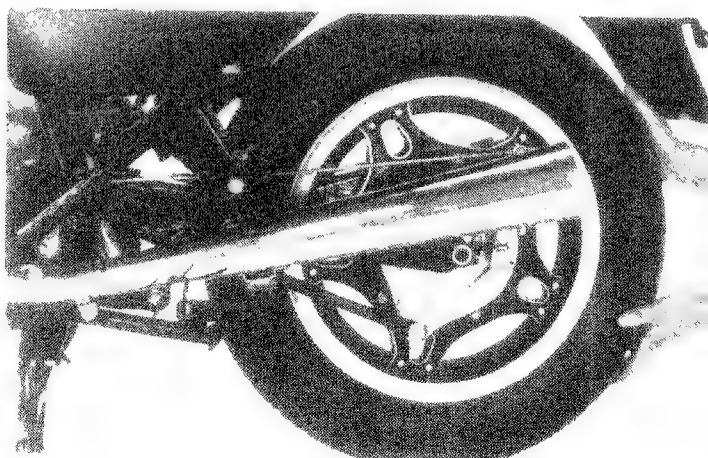
Place the motorcycle on its center stand.

Move the rear wheel sideways with force to see if the swingarm bearings are worn.

Replace if excessively worn (page 14-19).

Check the shock absorber for leaks or damage.

Tighten all suspension nuts and bolts.







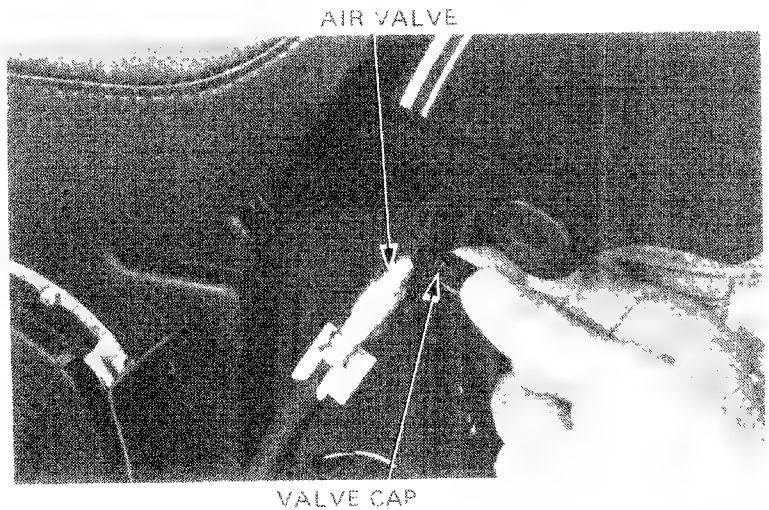
## MAINTENANCE

1. Turn the rear wheel upside down and measure the rear shock absorber air pressure.

### REAR SHOCK ABSORBER AIR PRESSURE:

GL500 0-500 kPa (0-5.0 kg/cm<sup>2</sup>, 0-70 psi)  
GL500I 100-500 kPa (1.0-5.0 kg/cm<sup>2</sup>, 14-70 psi)

2. Check the air pressure when the rear shock absorber is cold.



VALVE CAP

## NUTS, BOLTS, FASTENERS

2. Check the tightness of nuts and bolts and tighten if necessary.  
3. Check the tightness of safety caps.

## WHEELS

1. Tire pressure should be checked when tires are COLD.

2. Check the tires for cuts, imbedded nails, or other foreign objects.

### RECOMMENDED TIRE PRESSURE AND TIRE SIZE

| Tire size                      | Front           | Rear             |
|--------------------------------|-----------------|------------------|
|                                | 3.50S19<br>4PR  | 130/90<br>16-67S |
| Up to<br>200 kg<br>(2.0 tons)  | 200<br>(2.0-28) | 200<br>(2.0-28)  |
| 200-300 kg<br>(2.0 tons)       | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 300-400 kg<br>(3.0 tons)       | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 400-500 kg<br>(4.0 tons)       | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 500-600 kg<br>(5.0 tons)       | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 600-700 kg<br>(6.0 tons)       | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 700-800 kg<br>(7.0 tons)       | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 800-900 kg<br>(8.0 tons)       | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 900-1000 kg<br>(9.0 tons)      | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 1000-1100 kg<br>(10.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 1100-1200 kg<br>(11.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 1200-1300 kg<br>(12.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 1300-1400 kg<br>(13.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 1400-1500 kg<br>(14.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 1500-1600 kg<br>(15.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 1600-1700 kg<br>(16.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 1700-1800 kg<br>(17.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 1800-1900 kg<br>(18.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 1900-2000 kg<br>(19.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 2000-2100 kg<br>(20.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 2100-2200 kg<br>(21.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 2200-2300 kg<br>(22.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 2300-2400 kg<br>(23.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 2400-2500 kg<br>(24.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 2500-2600 kg<br>(25.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 2600-2700 kg<br>(26.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 2700-2800 kg<br>(27.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 2800-2900 kg<br>(28.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 2900-3000 kg<br>(29.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 3000-3100 kg<br>(30.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 3100-3200 kg<br>(31.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 3200-3300 kg<br>(32.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 3300-3400 kg<br>(33.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 3400-3500 kg<br>(34.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 3500-3600 kg<br>(35.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 3600-3700 kg<br>(36.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 3700-3800 kg<br>(37.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 3800-3900 kg<br>(38.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 3900-4000 kg<br>(39.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 4000-4100 kg<br>(40.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 4100-4200 kg<br>(41.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 4200-4300 kg<br>(42.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 4300-4400 kg<br>(43.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 4400-4500 kg<br>(44.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 4500-4600 kg<br>(45.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 4600-4700 kg<br>(46.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 4700-4800 kg<br>(47.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 4800-4900 kg<br>(48.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 4900-5000 kg<br>(49.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 5000-5100 kg<br>(50.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 5100-5200 kg<br>(51.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 5200-5300 kg<br>(52.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 5300-5400 kg<br>(53.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 5400-5500 kg<br>(54.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 5500-5600 kg<br>(55.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 5600-5700 kg<br>(56.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 5700-5800 kg<br>(57.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 5800-5900 kg<br>(58.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 5900-6000 kg<br>(59.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 6000-6100 kg<br>(60.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 6100-6200 kg<br>(61.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 6200-6300 kg<br>(62.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 6300-6400 kg<br>(63.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 6400-6500 kg<br>(64.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 6500-6600 kg<br>(65.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 6600-6700 kg<br>(66.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 6700-6800 kg<br>(67.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 6800-6900 kg<br>(68.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 6900-7000 kg<br>(69.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 7000-7100 kg<br>(70.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 7100-7200 kg<br>(71.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 7200-7300 kg<br>(72.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 7300-7400 kg<br>(73.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 7400-7500 kg<br>(74.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 7500-7600 kg<br>(75.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 7600-7700 kg<br>(76.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 7700-7800 kg<br>(77.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 7800-7900 kg<br>(78.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 7900-8000 kg<br>(79.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 8000-8100 kg<br>(80.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 8100-8200 kg<br>(81.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 8200-8300 kg<br>(82.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 8300-8400 kg<br>(83.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 8400-8500 kg<br>(84.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 8500-8600 kg<br>(85.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 8600-8700 kg<br>(86.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 8700-8800 kg<br>(87.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 8800-8900 kg<br>(88.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 8900-9000 kg<br>(89.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 9000-9100 kg<br>(90.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 9100-9200 kg<br>(91.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 9200-9300 kg<br>(92.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 9300-9400 kg<br>(93.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 9400-9500 kg<br>(94.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 9500-9600 kg<br>(95.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 9600-9700 kg<br>(96.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 9700-9800 kg<br>(97.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 9800-9900 kg<br>(98.0 tons)    | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 9900-10000 kg<br>(99.0 tons)   | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 10000-10100 kg<br>(100.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 10100-10200 kg<br>(101.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 10200-10300 kg<br>(102.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 10300-10400 kg<br>(103.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 10400-10500 kg<br>(104.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 10500-10600 kg<br>(105.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 10600-10700 kg<br>(106.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 10700-10800 kg<br>(107.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 10800-10900 kg<br>(108.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 10900-11000 kg<br>(109.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 11000-11100 kg<br>(110.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 11100-11200 kg<br>(111.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 11200-11300 kg<br>(112.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 11300-11400 kg<br>(113.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 11400-11500 kg<br>(114.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 11500-11600 kg<br>(115.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 11600-11700 kg<br>(116.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 11700-11800 kg<br>(117.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 11800-11900 kg<br>(118.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 11900-12000 kg<br>(119.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 12000-12100 kg<br>(120.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 12100-12200 kg<br>(121.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 12200-12300 kg<br>(122.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 12300-12400 kg<br>(123.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 12400-12500 kg<br>(124.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 12500-12600 kg<br>(125.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 12600-12700 kg<br>(126.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 12700-12800 kg<br>(127.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 12800-12900 kg<br>(128.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 12900-13000 kg<br>(129.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 13000-13100 kg<br>(130.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 13100-13200 kg<br>(131.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 13200-13300 kg<br>(132.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 13300-13400 kg<br>(133.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 13400-13500 kg<br>(134.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 13500-13600 kg<br>(135.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 13600-13700 kg<br>(136.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 13700-13800 kg<br>(137.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 13800-13900 kg<br>(138.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 13900-14000 kg<br>(139.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 14000-14100 kg<br>(140.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 14100-14200 kg<br>(141.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 14200-14300 kg<br>(142.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 14300-14400 kg<br>(143.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 14400-14500 kg<br>(144.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 14500-14600 kg<br>(145.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 14600-14700 kg<br>(146.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 14700-14800 kg<br>(147.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 14800-14900 kg<br>(148.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 14900-15000 kg<br>(149.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 15000-15100 kg<br>(150.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 15100-15200 kg<br>(151.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 15200-15300 kg<br>(152.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 15300-15400 kg<br>(153.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 15400-15500 kg<br>(154.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 15500-15600 kg<br>(155.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 15600-15700 kg<br>(156.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 15700-15800 kg<br>(157.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 15800-15900 kg<br>(158.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 15900-16000 kg<br>(159.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 16000-16100 kg<br>(160.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 16100-16200 kg<br>(161.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 16200-16300 kg<br>(162.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 16300-16400 kg<br>(163.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 16400-16500 kg<br>(164.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 16500-16600 kg<br>(165.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 16600-16700 kg<br>(166.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 16700-16800 kg<br>(167.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 16800-16900 kg<br>(168.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 16900-17000 kg<br>(169.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 17000-17100 kg<br>(170.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 17100-17200 kg<br>(171.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 17200-17300 kg<br>(172.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 17300-17400 kg<br>(173.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 17400-17500 kg<br>(174.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 17500-17600 kg<br>(175.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 17600-17700 kg<br>(176.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 17700-17800 kg<br>(177.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 17800-17900 kg<br>(178.0 tons) | 200<br>(2.0-28) | 250<br>(2.5-36)  |
| 17900-18000 kg<br>(179.0 tons) | 200<br>(2.0-28) | 2                |



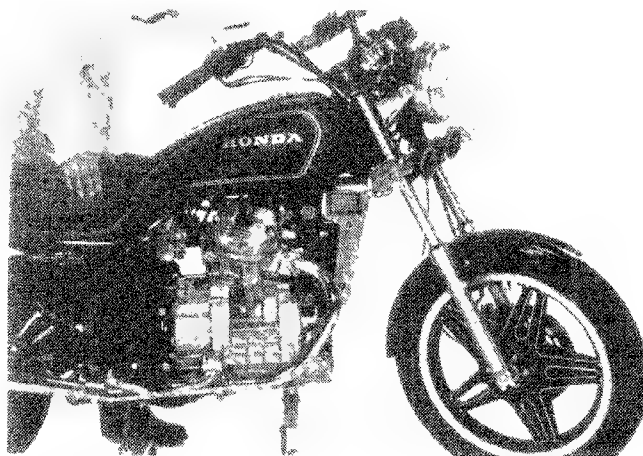


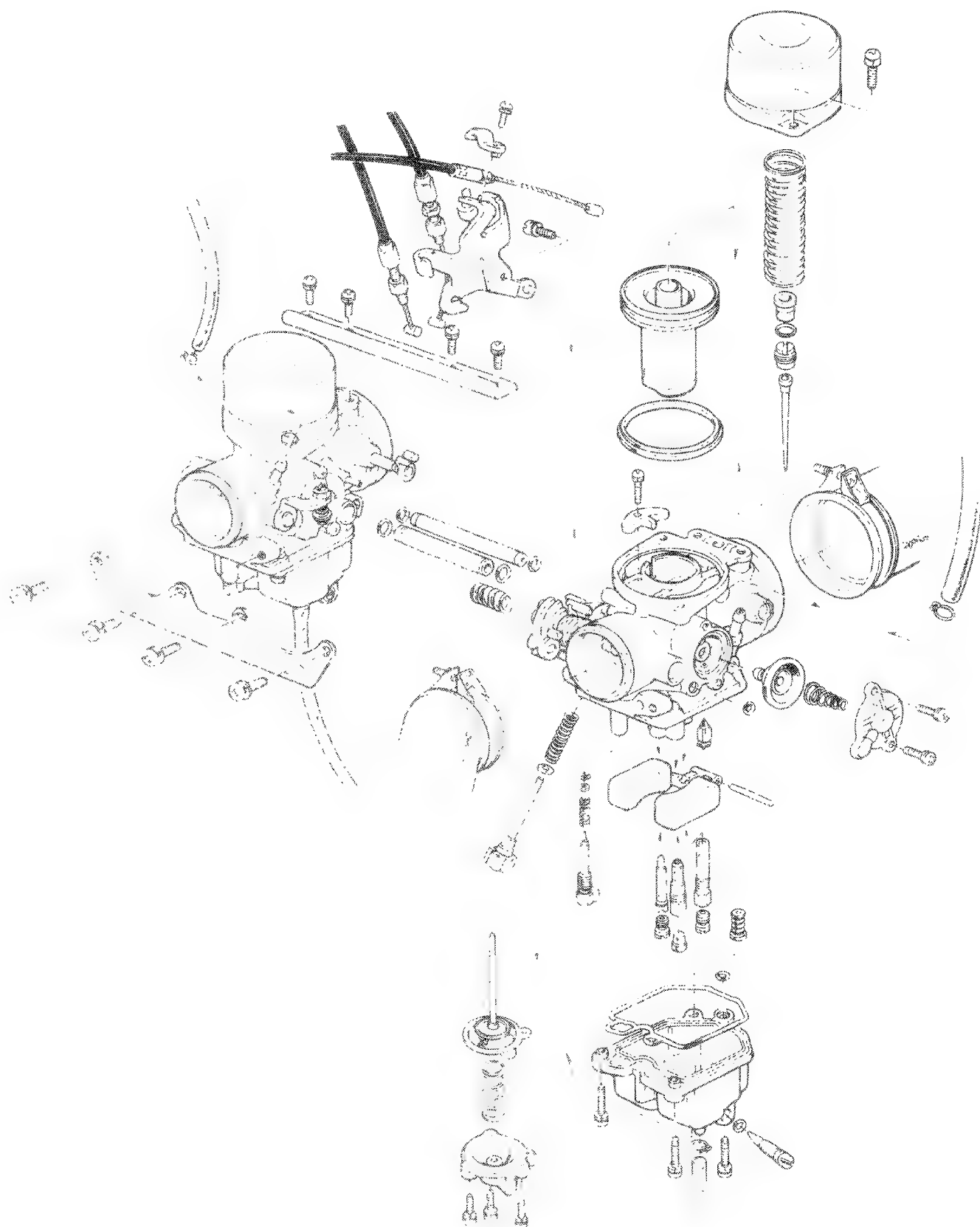
## STEERING HEAD BEARINGS

Check the steering head bearings for proper adjustment.

1. Turn the steering head bearings to the proper adjustment.

2. Check the steering head bearings for proper adjustment. If the steering head bearings are loose, adjust them by turning the adjusting nut. (page 3-17)





|                           |     |                              |      |
|---------------------------|-----|------------------------------|------|
| SERVICE INFORMATION       | 4-1 | ACCELERATOR PUMP DISASSEMBLY | 4-9  |
| TROUBLESHOOTING           | 4-1 | COMPONENT ASSEMBLY           | 4-9  |
| CARBURETOR REMOVAL        | 4-2 | FLOAT LEVEL                  | 4-10 |
| CARBURETOR SEPARATION     | 4-2 | FAST IDLE ADJUSTMENT         | 4-11 |
| CARBURETOR ASSEMBLY       | 4-4 | ACCELERATOR PUMP ADJUSTMENT  | 4-11 |
| VACCU CYLINDER            |     | CARBURETOR INSTALLATION      | 4-12 |
| DISASSEMBLY/INSPECTION    | 4-5 | PILOT SCREW ADJUSTMENT       | 4-12 |
| FLOAT CHAMBER DISASSEMBLY | 4-6 | HIGH ALTITUDE ADJUSTMENT     | 4-13 |
| AIR CUT-OFF VALVE         |     | FUEL TANK                    | 4-14 |
| DISASSEMBLY               | 4-8 | AIR CLEANER CASE             | 4-16 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- Use caution when working with gasoline. Always work in a well ventilated area and away from sparks or open flames.
- When disassembling fuel system parts, note the locations of the O-rings. Replace them with new ones on reassembly.
- Fuel system parts have drain plugs that can be loosened to drain residual gasoline.

### Tools

#### Consumption

|                   |                            |
|-------------------|----------------------------|
| Float level gauge | 07401-0010000              |
| Hand vacuum pump  | A973X-041-XXXXX (USA only) |

### SPECIFICATIONS

|                                                |                            |
|------------------------------------------------|----------------------------|
| Venturi diameter                               | 34 mm (1.3 in)             |
| Jet No.                                        | VB29A                      |
| Float level                                    | 15.5 mm (0.61 in)          |
| Pilot screw                                    | See Page 4-12              |
| Idle speed                                     | 1100 ± 100 rpm             |
| Vacuum pressure difference between carburetors | 40 mm (1.6 in) Hg          |
| Throttle grip free play                        | 2 - 6 mm<br>(1/8 - 1/4 in) |

## TROUBLESHOOTING

### Engine Cranks But Won't Start

1. Fuel line or tank
2. Air filter getting to cylinders
3. Fuel mixture tube getting to cylinders
4. No spark at plugs - ignition malfunction
5. Fuel flow restricted

### Engine Idles Roughly, Stalls, or Runs Poorly

1. Idle speed incorrect
2. Ignition malfunction
3. Poor compression
4. Rich mixture
5. Lean mixture
6. Air cleaner clogged
7. Air leaking into manifold
8. Fuel flow restricted
9. Fuel contaminated
10. Carburetors not synchronized
11. Faulty vacuum piston

### Lean Mixture:

1. Carburetor fuel jets clogged
2. Vacuum piston stuck closed
3. Fuel cap vent blocked
4. Fuel filter clogged
5. Fuel line blocked
6. Float valve faulty
7. Float level too low
8. Fuel flow restricted

### Rich Mixture:

1. Choke stuck closed
2. Float level set too high or float sticking
3. Carburetor air jets clogged
4. Sticking float
5. Dirty air cleaner

### Fuel flow restricted:

1. Fuel strainer or fuel valve clogged
2. Fuel tank cap breather hole clogged
3. Vacuum tube or air vent tube clogged
4. Fuel valve diaphragm faulty

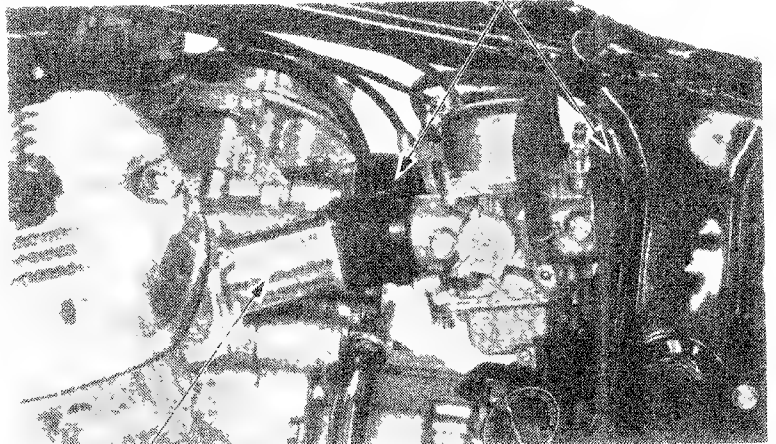


## FUEL SYSTEM

### CARBURETOR REMOVAL

1. Disconnect the carburetor wire labels from the carburetor. (See Fig. 1-1.)

CARBURETOR WIRE LABELS



CARBURETOR MANIFOLD

2. Disconnect the carburetor manifold from the engine. (See Fig. 1-2.)

CHOKE CABLES

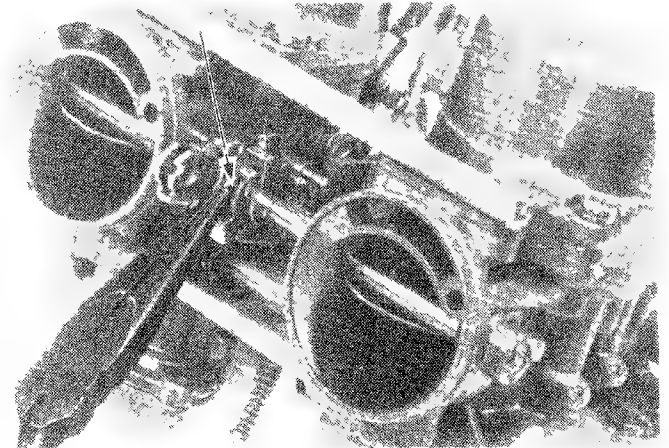


CHOKE CABLE HOLDER

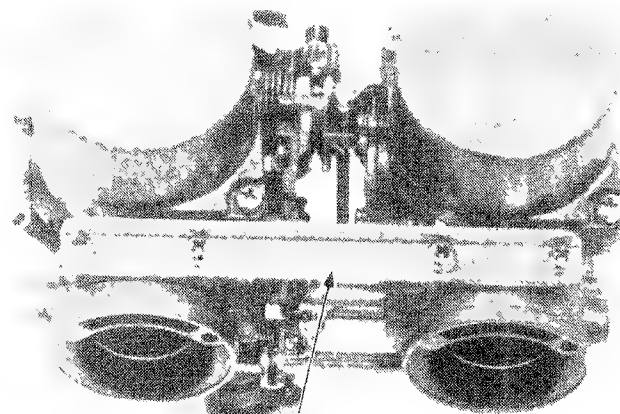
### CARBURETOR SEPARATION

1. Disconnect the carburetor from the manifold. (See Fig. 1-3.)

RELIEF SPRING

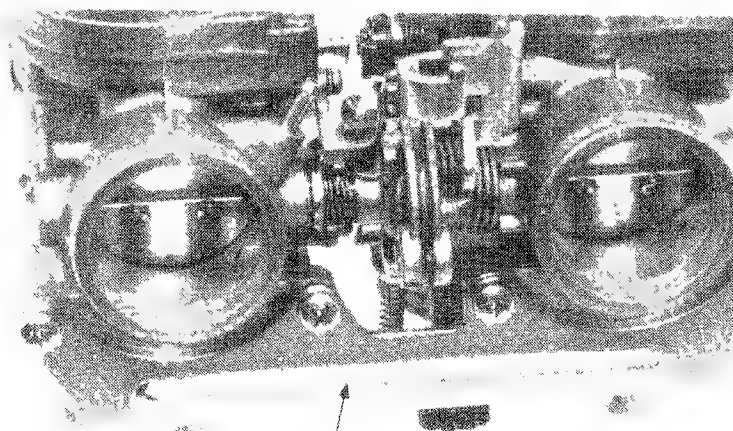


Remove the rear stay



REAR STAY

Remove the stay plate



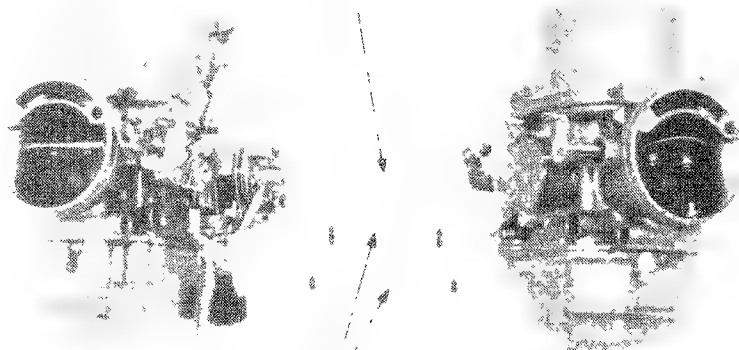
FRONT STAY

Remove the carburetors

**CAUTION**

Set carburetors horizontally to avoid damage to the joint pipes and hose bracket.

SPRING



FUEL JOINT PIPES

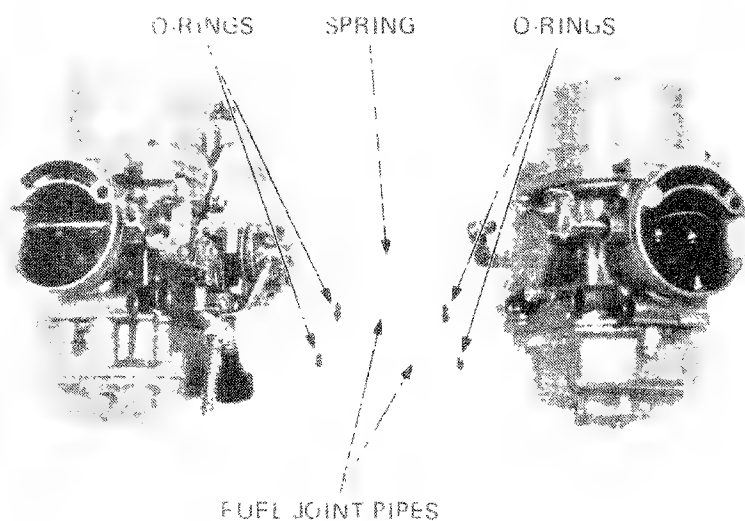


## CARBURETOR ASSEMBLY

Slide the O-rings on the fuel joint pipes

NOTE:

Apply a thin coating of oil to the O-rings.



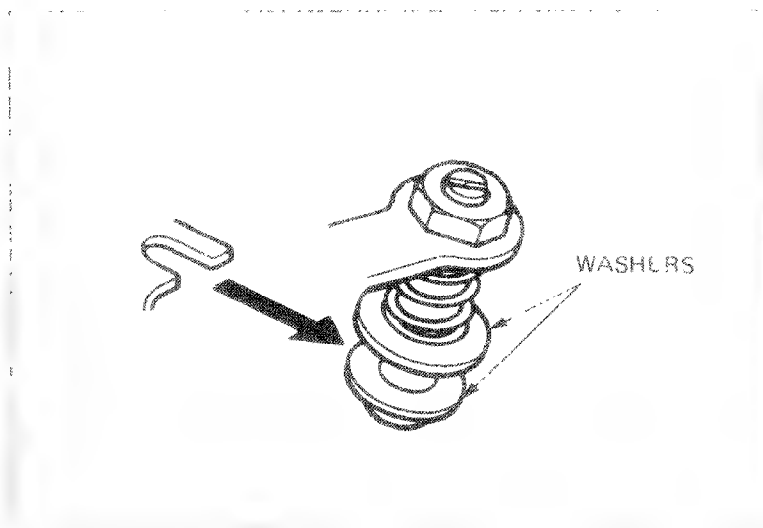
Secure the right and left carburetors

NOTE:

Insert the left carburetor throttle link between the plain washers.

Make sure the spring is properly positioned.

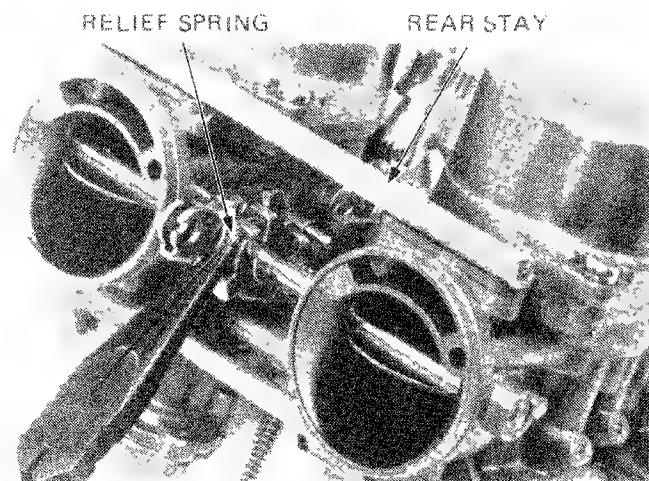
Install the thrust spring between the throttle links.



Install the front and rear stay plates

Attach the relief spring to the choke shaft arm.

Open the choke valve and check the choke relief position.

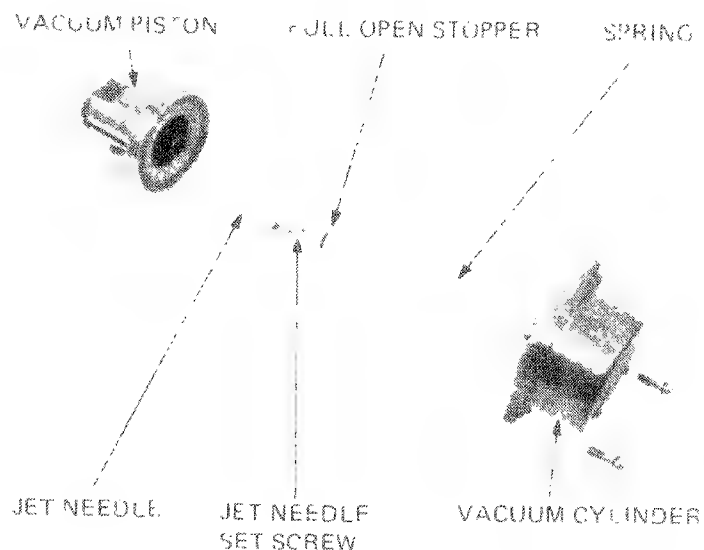






## VACUUM CYLINDER DISASSEMBLY/INSPECTION

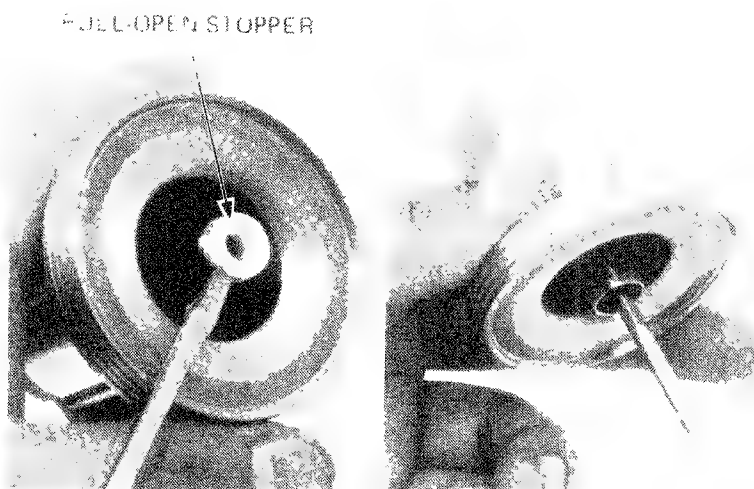
Remove the vacuum cylinder from the carburetor.  
Remove the vacuum piston and inspect for wear,  
nicks, or scratches.  
Make sure the piston moves freely in the cylinder  
and in the bore of the carburetor.



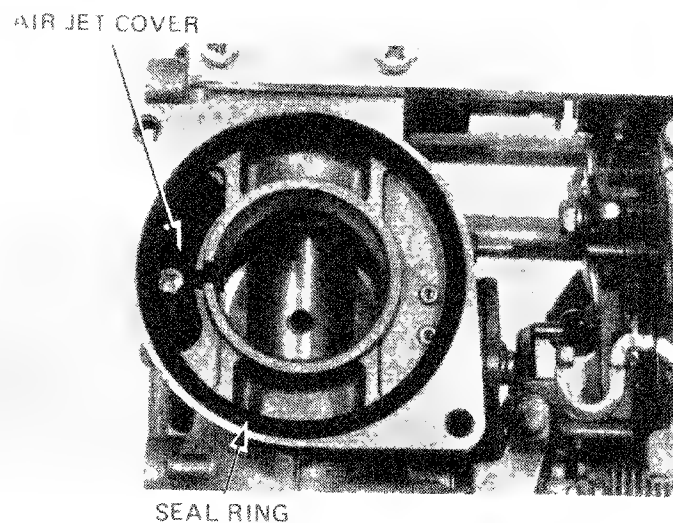
Remove the full open stopper.  
Remove the needle set screw and the jet needle.

### NOTE

Inspect the needle and seat for deposits,  
grooves, or other damage.



Remove the seal ring and air jet cover.





2. Slowly open the primary main air jet, secondary air jet, and slow air jet, with compressed air.

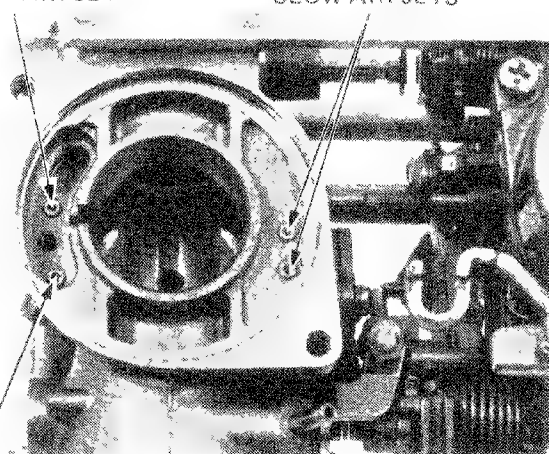
## NOTE

Never clean carburetor jets with wire or pins. This will enlarge the openings and result in excessive fuel consumption. Do not try to remove the air jets.

SECONDARY AIR JET

SLOW AIR JETS

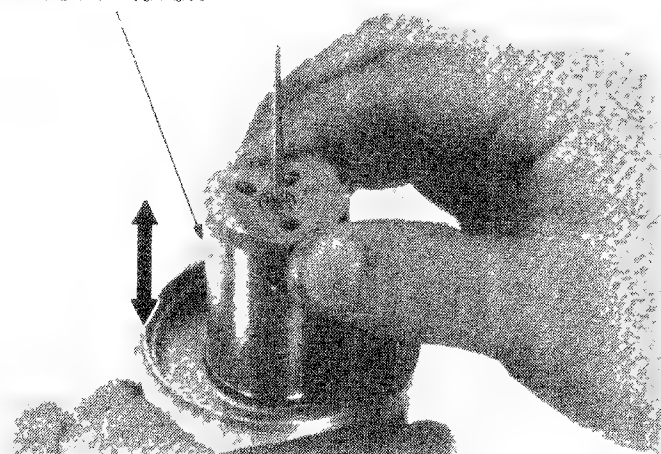
PRIMARY MAIN AIR JETS



## VACUUM PISTON INSPECTION

Check the vacuum piston for free movement in the guide.

VACUUM PISTON



## FLOAT CHAMBER DISASSEMBLY

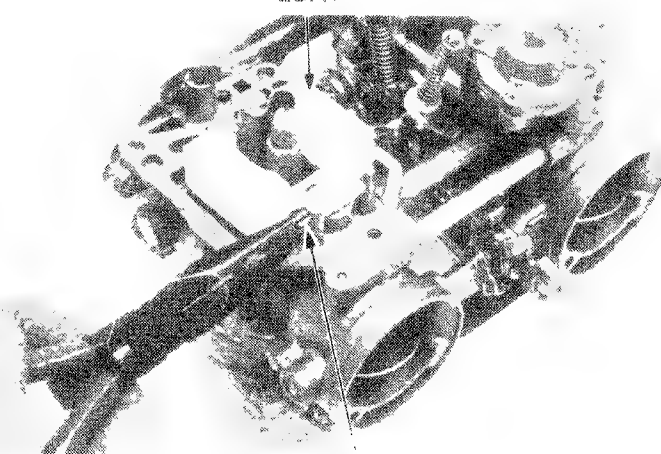
Remove the float chamber body.  
Remove the float arm pin using a needle nose pliers.  
Remove the float and float valve.

## NOTE

The lock screws are factory preset and should not be removed unless the carburetor is overhauled.

FLOAT

FLOAT ARM PIN



1. Remove the fuel tank cap.



Fig. 4-1

2. Remove the fuel tank cap.

3. Remove the fuel tank cap.

4. Remove the fuel tank cap.

5. Remove the fuel tank cap.

6. Remove the fuel tank cap.

7. Remove the fuel tank cap.

8. Remove the fuel tank cap.

9. Remove the fuel tank cap.

10. Remove the fuel tank cap.

11. Remove the fuel tank cap.

12. Remove the fuel tank cap.

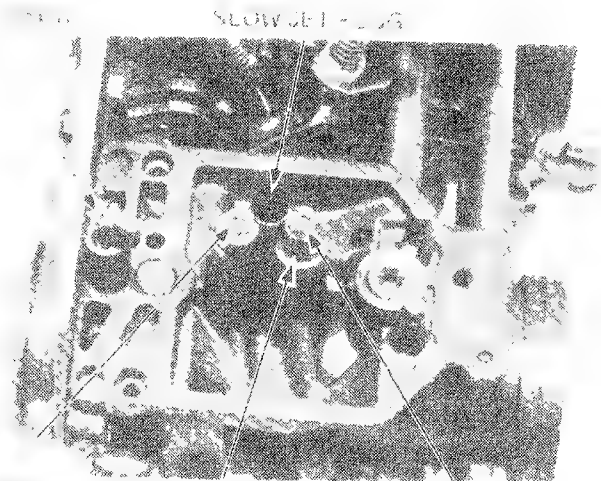


Fig. 4-2

Fig. 4-3

Fig. 4-4

12. Remove the fuel tank cap.

13. Remove the fuel tank cap.

14. Remove the fuel tank cap.

15. Remove the fuel tank cap.

16. Remove the fuel tank cap.

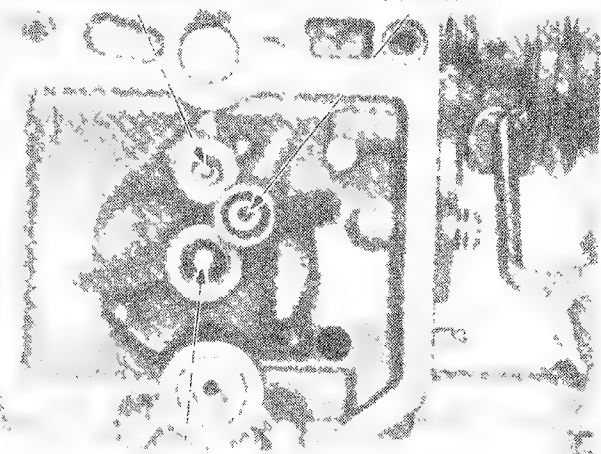


Fig. 4-5

Check the air passages and jets with compressed air.

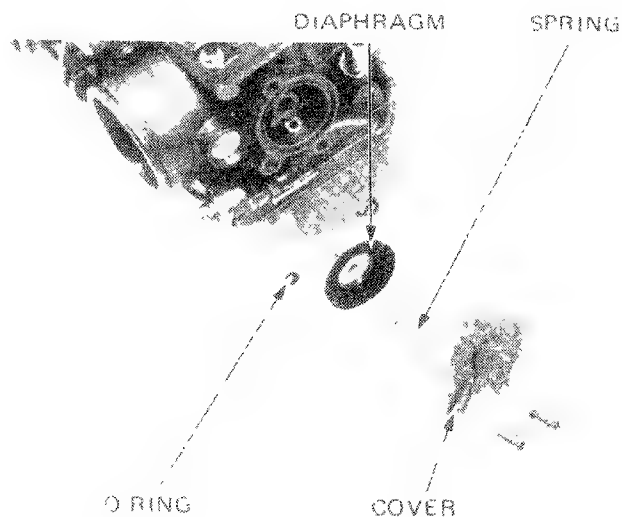


## AIR CUT-OFF VALVE DISASSEMBLY

- 1. Remove the air cut-off valve cover and spring.
- 2. Remove the diaphragm.
- 3. Remove the O-ring.



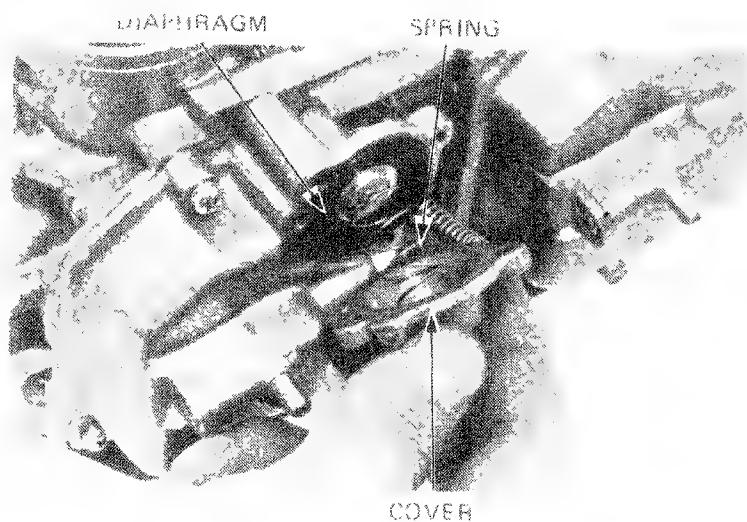
Inspect the air hoses and diaphragm for cracks and pinholes.





## ACCELERATOR PUMP DISASSEMBLY

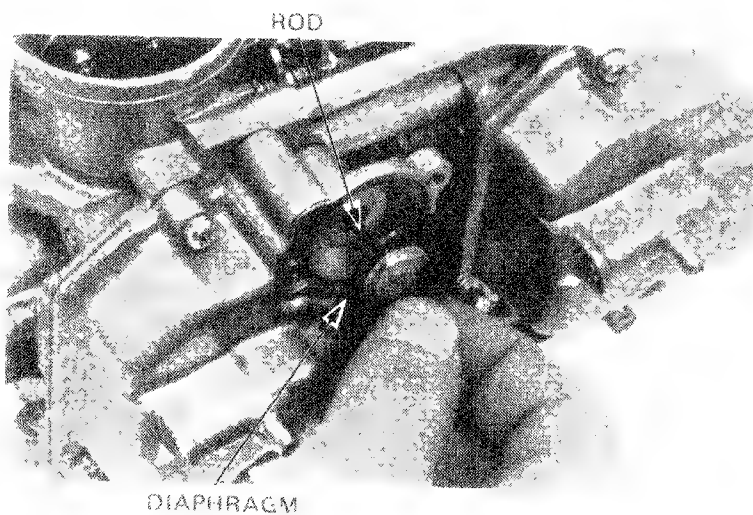
Remove the accelerator pump cover and spring.



Remove the diaphragm.  
Inspect the diaphragm for cracks and brittleness.

NOTE:

Be sure the rod is not bent.

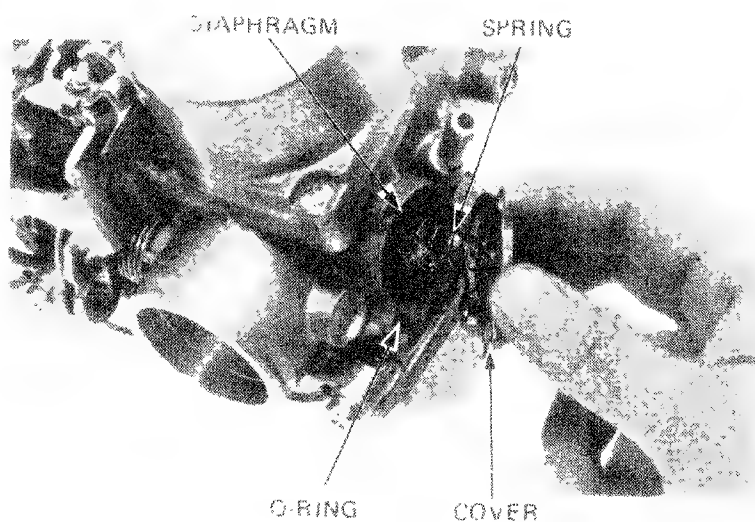


## COMPONENT ASSEMBLY

Reassemble the accelerator pump, air cut off valve and air cut off cylinder. Reverse the disassembly procedure.

NOTE:

After installing the air cut-off valve O-ring, make sure the flat surface is toward the body.

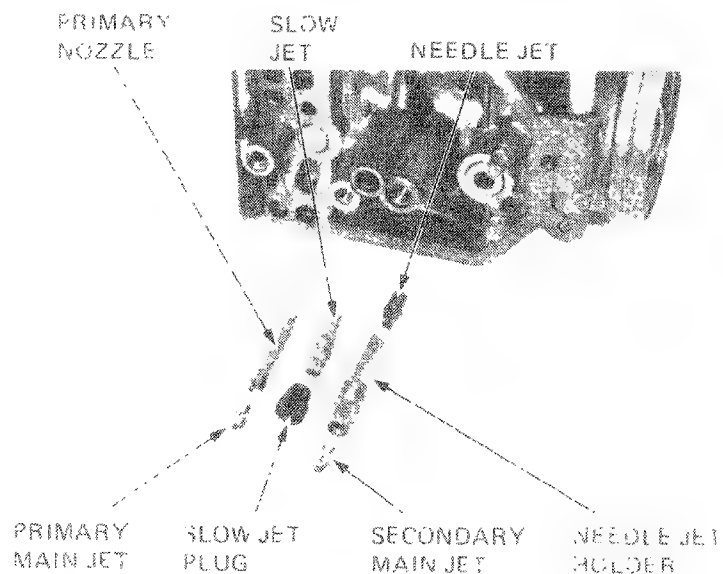


## FUEL SYSTEM



**HONDA**  
GL500  
GL500 INTERSTATE

to install the jets in the carburetor body.

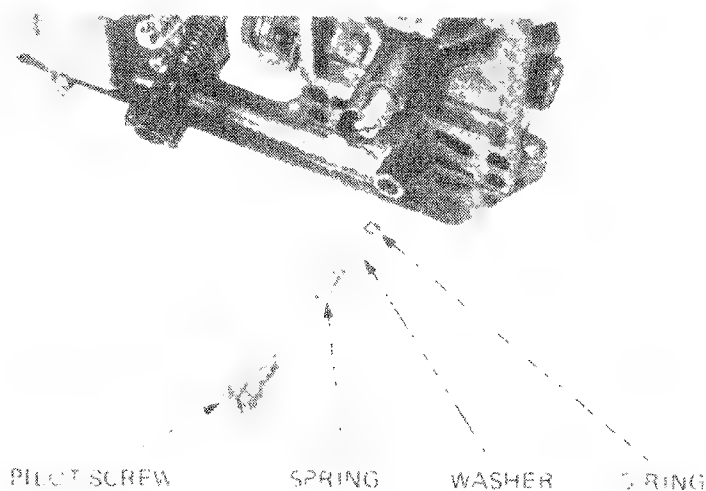


Reinstall the pilot screw and return it to its original position as noted during removal.

Perform pilot screw adjustment if a new pilot screw is installed (page 4-12).

### NOTES

Do not install limiter caps on new pilot screws until after adjustment has been made.



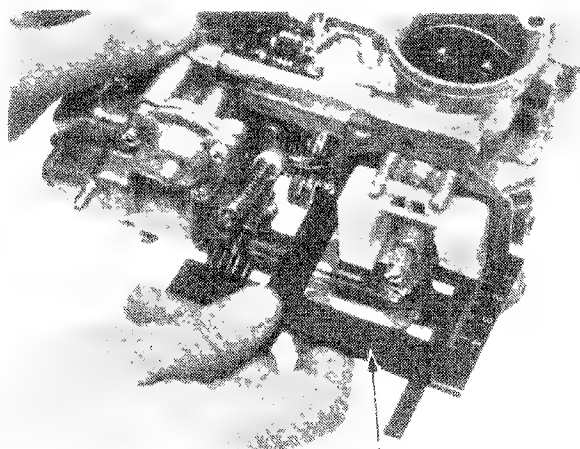
## FLOAT LEVEL

Remove the float chamber.

Measure the float level with the float tip just contacting the float valve and the carburetor inclined at 45° from vertical.

FLOAT LEVEL 15.5 ± 1 mm (0.61 ± 0.04 in)

Reprime the float if the float level is not within the specification.



FLOAT LEVEL GAUGE  
07401-0010000

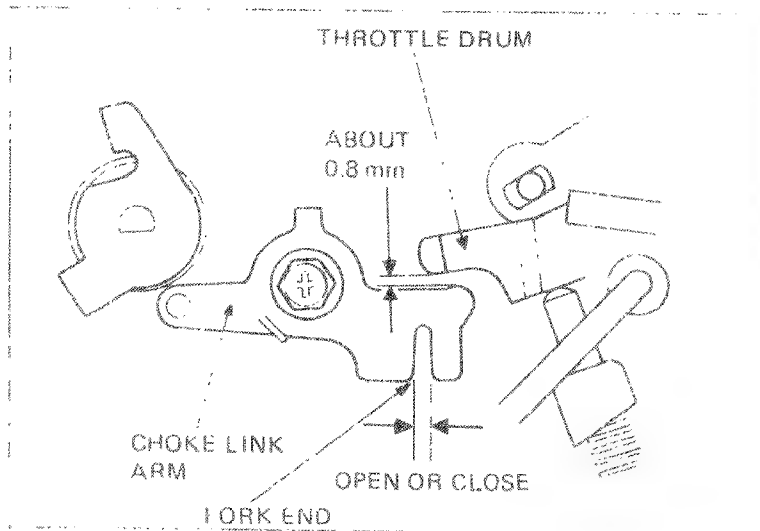


## FAST IDLE ADJUSTMENT

FAST IDLE: 1,500 – 2,500 rpm

If adjustment of the fast idle is necessary, remove the carburetor and close the throttle valve by turning the throttle stop screw out.

Adjust by opening or closing the fork end of the choke link arm until the clearance between the choke link arm and the throttle drum is about 0.8 mm (0.047 in).



## ACCELERATOR PUMP ADJUSTMENT

Loosen the throttle stop screw, so the throttle valve is closed.

Measure the clearance between the accelerator pump rod and the choke link arm with the throttle valve closed.

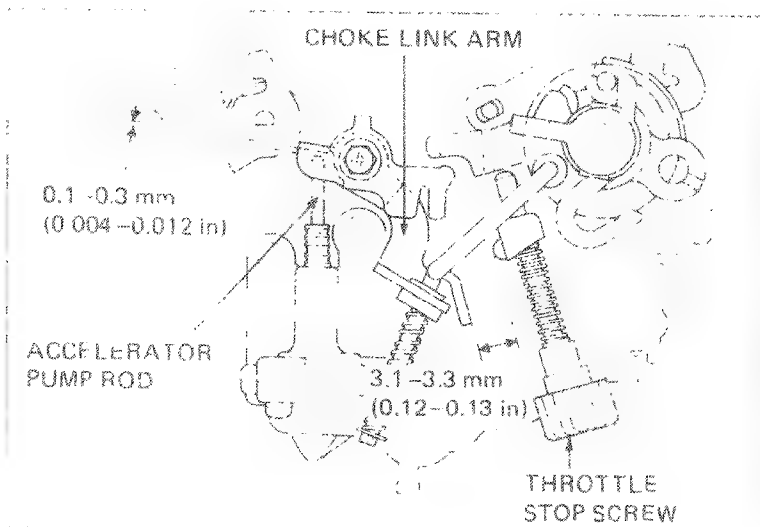
**CLEARANCE:** 0.1–0.3 mm (0.004–0.012 in)

Adjust by bending the choke link arm.

Measure the clearance between the choke link arm and stopper on the carburetor.

**CLEARANCE:** 3.1–3.3 mm (0.12–0.13 in)

Adjust by bending the choke link arm.





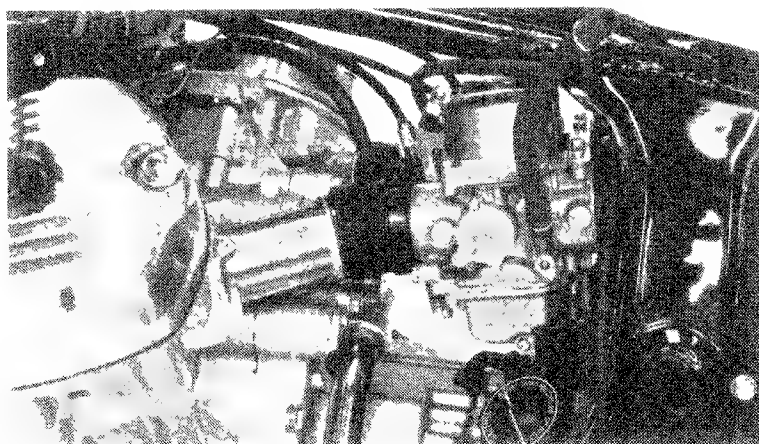
## CARBURETOR INSTALLATION

The installation sequence is essentially the reverse of removal.

**NOTE:** After installation, check the throttle and choke valve operation before installation.

After installation, perform the following adjustments:

- Throttle gear free play (Page 3-4)
- Carburetor synchronization (Page 3-9)
- Idle speed adjustment (Page 3-10)
- Pilot screw setting and adjustment (Page 4-12)



## PILOT SCREW ADJUSTMENT

### PILOT DROP PROCEDURE

- The pilot screws are factory preset and no adjustment is necessary unless the pilot screw is replaced (see removal above).
- After caps restrict adjustment to 7/8 turn.
- Use a tachometer with graduations of 100 rpm or smaller and that will accurately read at a 100 rpm change.

#### CAUTION

*Do not attempt to remove the pilot screw. The jet caps will cause screw breakage.*

Turn each pilot screw clockwise until it seats fully and back it out to the specification given below. Record setting prior to the fine pilot screw adjustment.

#### INITIAL OPENING: 1.5.8 turns out

Run the engine to operating temperature, stop and give it for approximately 10 minutes to cool down.

Adjust the tachometer.

Adjust the idle speed with the throttle stop screw.

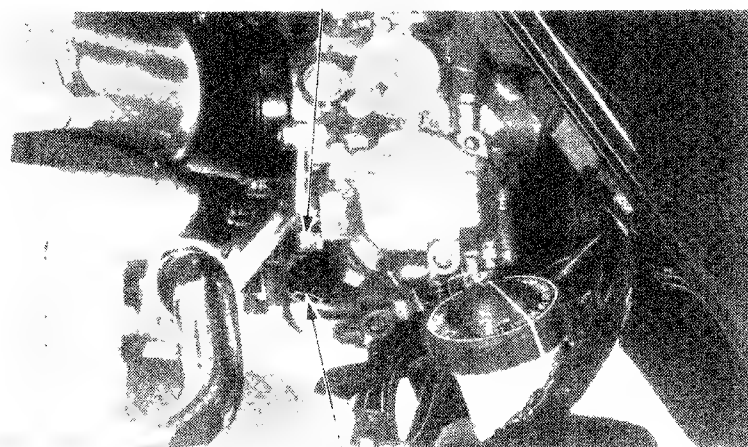
**IDLE SPEED: 1,100 ± 100 rpm**

Turn the pilot screw in or out to obtain the highest engine speed.

Repeat the idle speed with the throttle stop screw.

Turn the pilot screw gradually out. The engine speed will drop 100 rpm.

PILOT SCREW



THROTTLE STOP SCREW



7. Tighten the pilot screw seats before lowering the engine speed 100 rpm, continue to step 8.
8. Turn the pilot screw 1 turn open from the position obtained in step 7.
9. Adjust the idle speed with the throttle stop screw.
10. Repeat steps 5 through 8 for the remaining carburetor.
11. Apply a torque of 60 ft-lb or equivalent to the inside of the limiter caps. Place the caps over the pilot screws so that their tabs rest against the float chamber stop (Rich side) preventing further adjustment that would enrich the fuel mixture. (No counterclockwise rotation is permitted.)

12. Tighten the pilot screws when installing the limiter caps.

## HIGH ALTITUDE ADJUSTMENT (USA ONLY)

1. If the vehicle is to be operated continuously above 6,500 ft (2,000 m) the carburetors must be adjusted as described below to improve driveability and decrease exhaust emissions.
2. Warm up the engine to operating temperature. Stop and go driving for 10 minutes is sufficient.
3. Turn each pilot screw clockwise 1.2 turn.
4. Adjust the idle speed to 1,100 ± 100 rpm with the throttle stop screw.

### NOTE

These adjustments must be made at high altitude to ensure proper high altitude operation.

5. Attach the Vehicle Emission Control Information Update Label as shown. Refer to service bulletin 132 for information on obtaining the label.

### NOTE

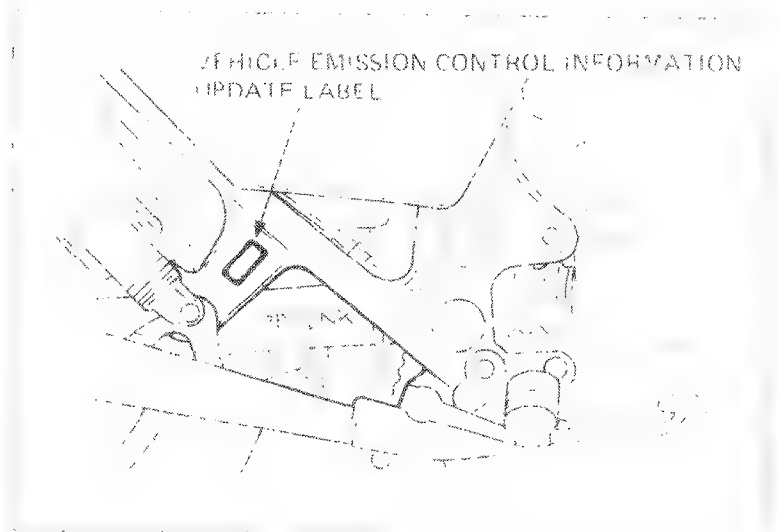
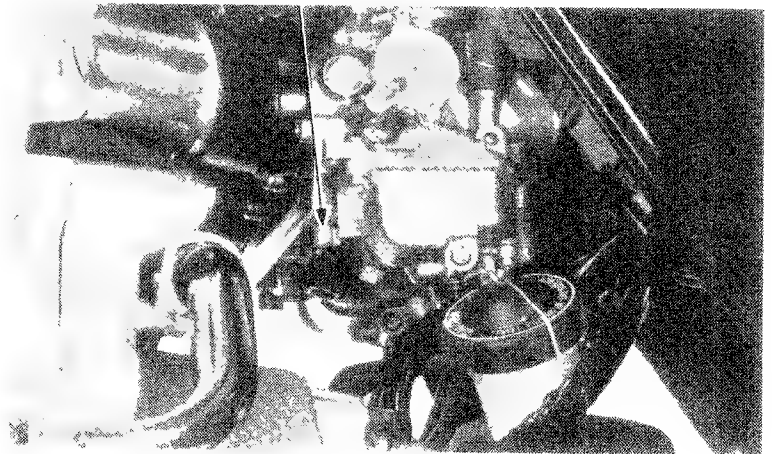
Do not attach the label to any part that can be easily removed from the vehicle.

### WARNING

*Operation at an altitude lower than 5,000 ft (1,500 m) with the carburetors adjusted for high altitudes may cause the engine to idle roughly and stall.*

*When the vehicle is to be operated continuously below 5,000 ft (1,500 m), turn each pilot screw counterclockwise to its original position against its stop and adjust the idle speed to 1,100 ± 100 rpm. Be sure to do these adjustments at low altitude.*

LIMITER CAP





## FUEL SYSTEM

### FUEL TANK

#### WARNING

Keep gasoline away from open flames or sparks.

Wipe up spilled gasoline at once.

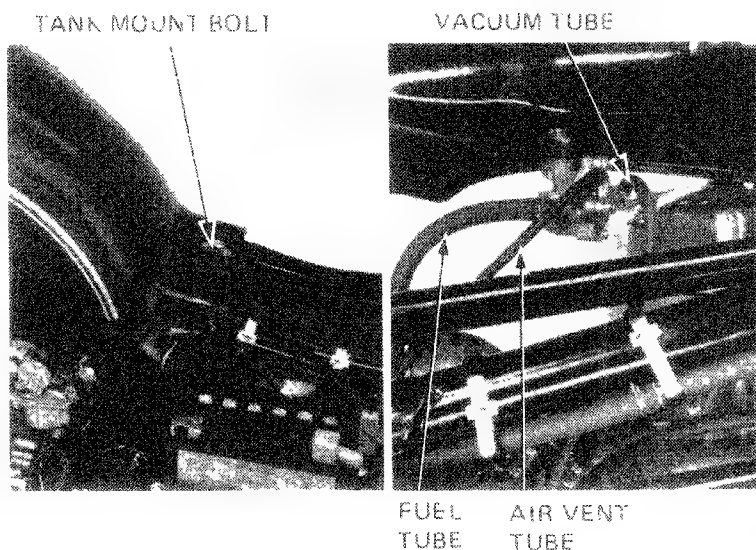
#### FUEL TANK REMOVAL

Turn over the seat.

Remove the fuel tank mount bolt.

Disconnect the fuel tube, vacuum tube and air vent tube.

Remove the fuel tank.



#### FUEL VALVE INSPECTION

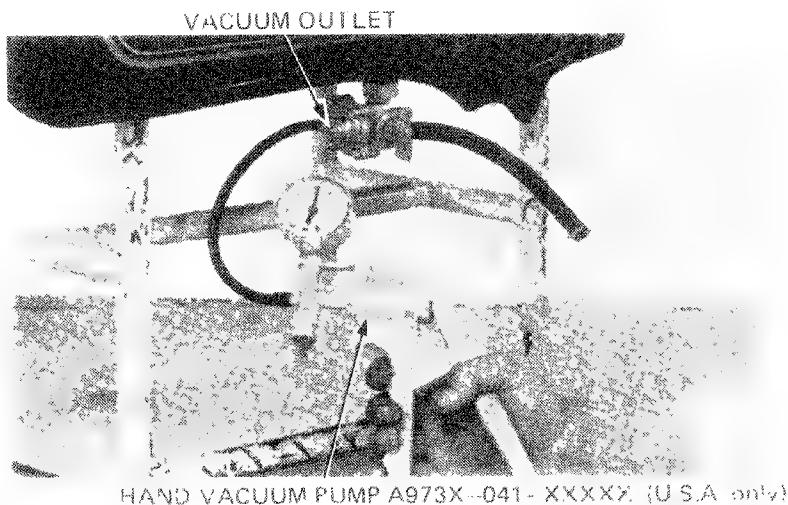
Check that the fuel tank is full and turn the fuel valve to ON.

Fuel should flow out from the fuel outlet tube when 20-25 mm Hg (0.5-0.8 in. Hg) of vacuum is applied.

If the flow of fuel is restricted, turn the fuel valve to RES and check if the fuel will flow out.

If fuel is not out of the fuel outlet, the fuel valve diaphragm is damaged or fuel or vacuum circuit is clogged.

If the flow of fuel is still restricted with the fuel valve in RES, this indicates that the fuel valve is clogged, the fuel passage or fuel tank cap breather hole is clogged.



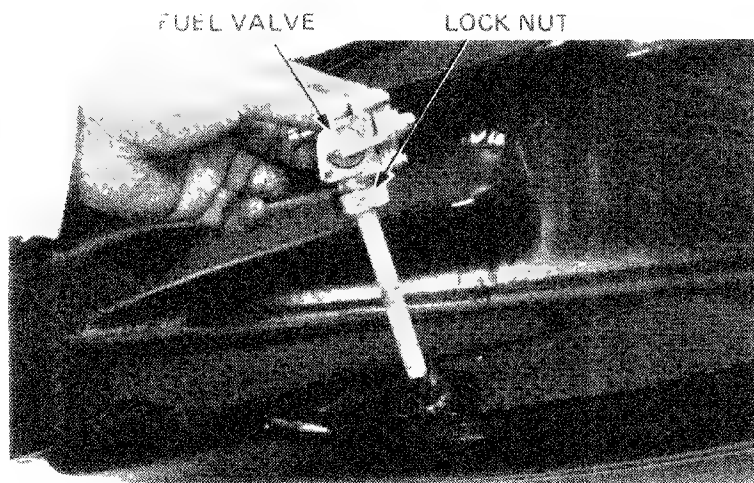
#### FUEL STRAINER DIASSEMBLY

Draw the fuel from the fuel tank.

Remove the fuel valve by loosening the lock nut.

#### NOTE

Hold the fuel valve body while turning the lock nut.



Remove the old strainer screen.  
Tap the top and bottom off the screen using compressed air.  
Check the O-ring for deterioration or damage and replace it with a new one if necessary.  
Remove the diaphragm cover by removing the four attaching screws.

STRAINER SCREEN

DIAPHRAGM COVER

Inspect the diaphragm for deterioration or damage.  
Clean the fuel valve using compressed air.

**NOTE**

Blow open all passages with the valve in ON and RES positions.

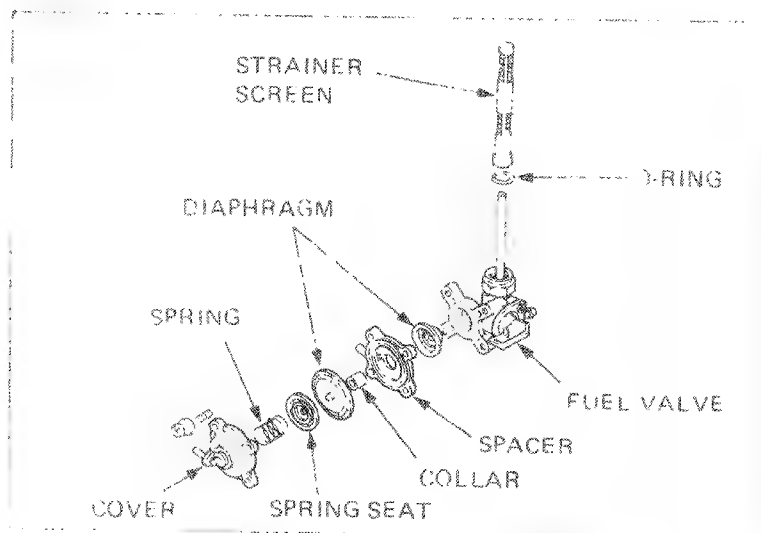
DIAPHRAGM

**FUEL VALVE ASSEMBLY**

Assembly is the reverse order of disassembly.

**NOTE**

Make sure that the diaphragm is not pinched in the valve body.  
After installation, check the operation of the fuel valve. Also make sure that fuel is not leaking.  
Hold the fuel valve while turning the fuel valve retaining nut.

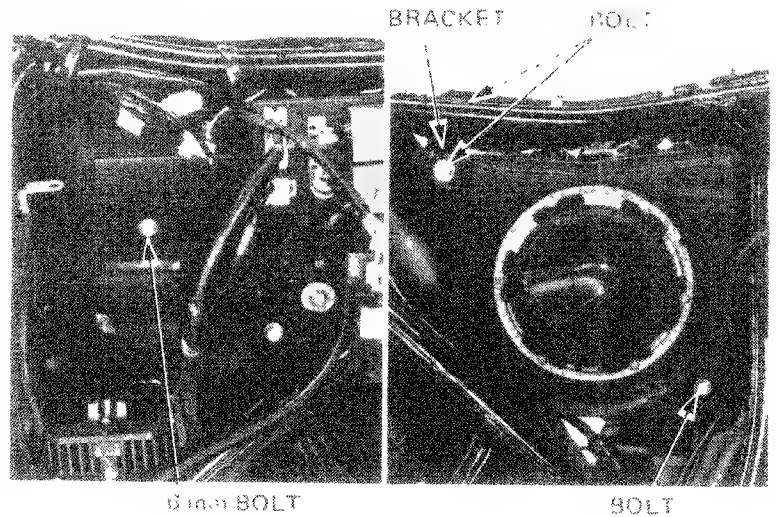


## AIR CLEANER CASE

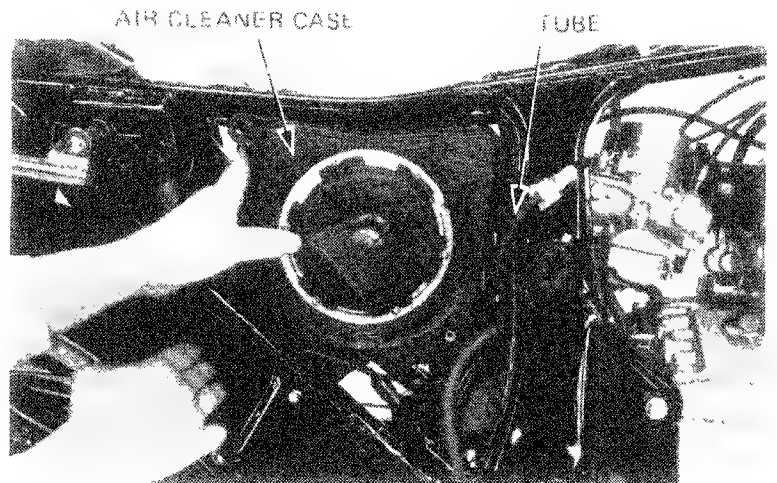
### AIR CLEANER CASE REMOVAL

Remove the 6mm and 9mm bolts from the air cleaner case bracket.

Remove the air cleaner case from the engine.

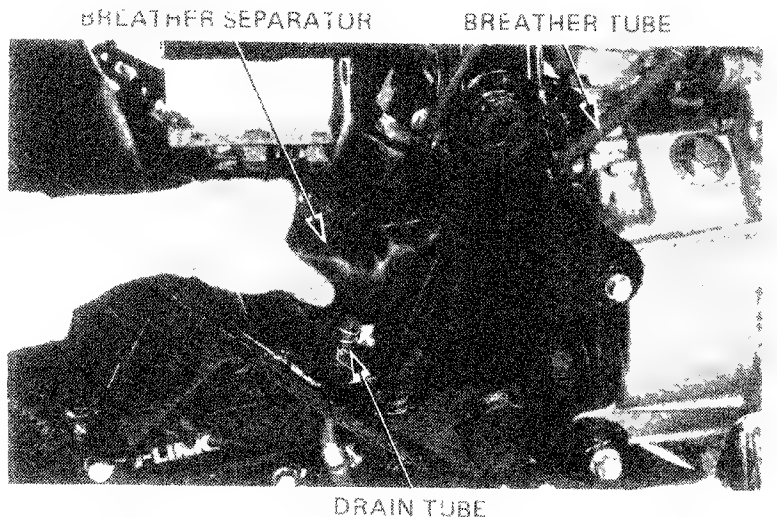


Disconnect the breather tube from the air separator case and remove the air cleaner case from the engine.



Disconnect the breather tube and drain tube from the air separator.

Remove the breather separator.





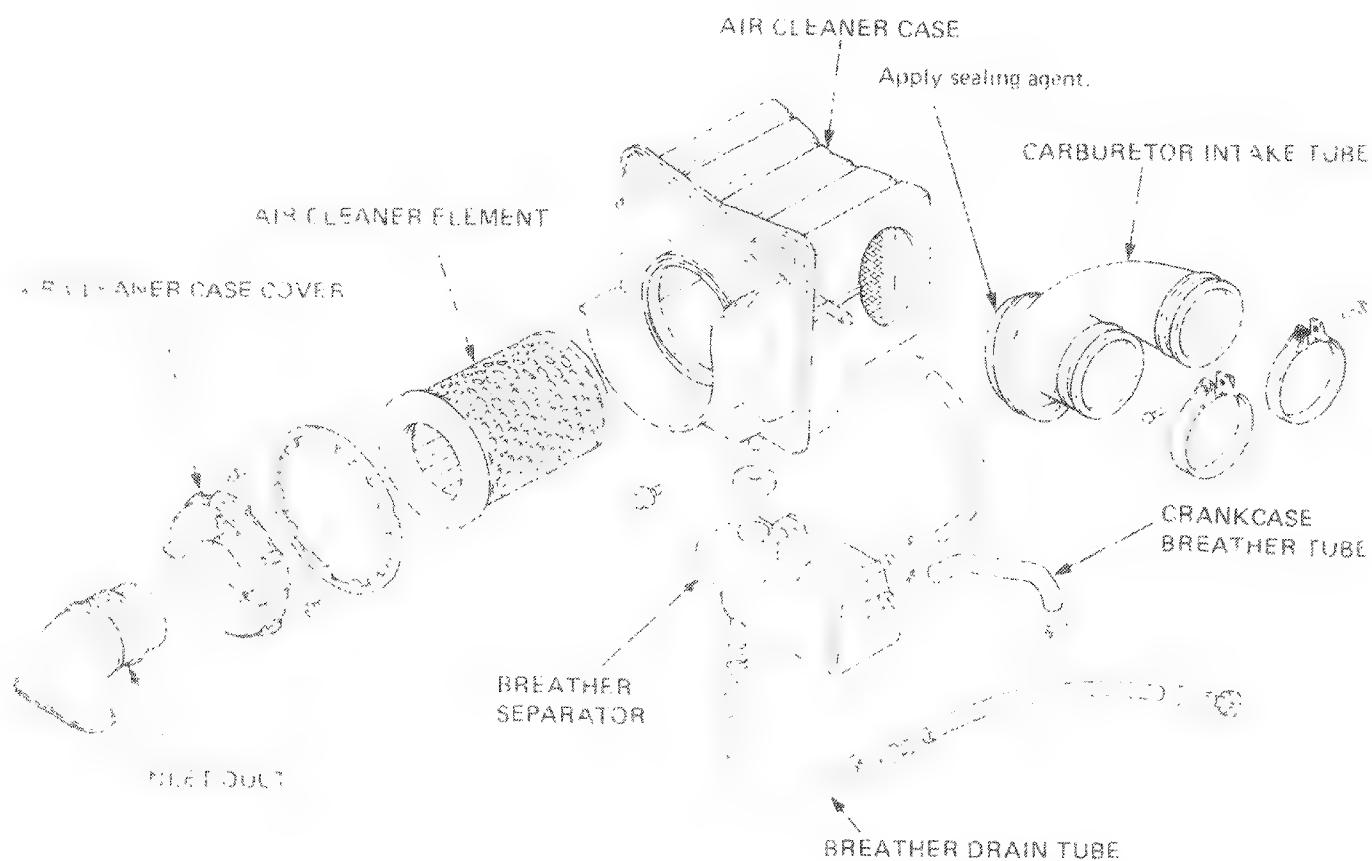


## AIR CLEANER CASE INSTALLATION

Installation of the air cleaner case is essentially the reverse order of the repair.

### NOTE

Apply sealing agent to the intake tube when installing.





|                     |     |
|---------------------|-----|
| SERVICE INFORMATION | 5-1 |
| ENGINE REMOVAL      | 5-2 |
| ENGINE INSTALLATION | 5-7 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- Perform engine removal for servicing:
  - Crankshaft/Piston
  - Connecting rods
  - Camshafts
  - Flywheel and starting clutch
  - Gearshift spindle
  - Transmission
  - Water pump/mechanical seal
- Remove and install the engine with a hydraulic jack to support its weight.
- Drain the engine oil before removing the engine if the front or rear cover is to be removed.
- For cooling system removal and installation, see section 9, Cooling System.

### SPECIFICATIONS

|                                        |                     |
|----------------------------------------|---------------------|
| Engine weight                          | 71.5 kg (158 lbs)   |
| Engine oil capacity                    | 3.0 lit (3.2 US qt) |
| Engine oil recommendation              | See page 2-1        |
| Coolant capacity (Radiator and engine) | 1.8 lit (1.9 US qt) |

### TORQUE VALUES

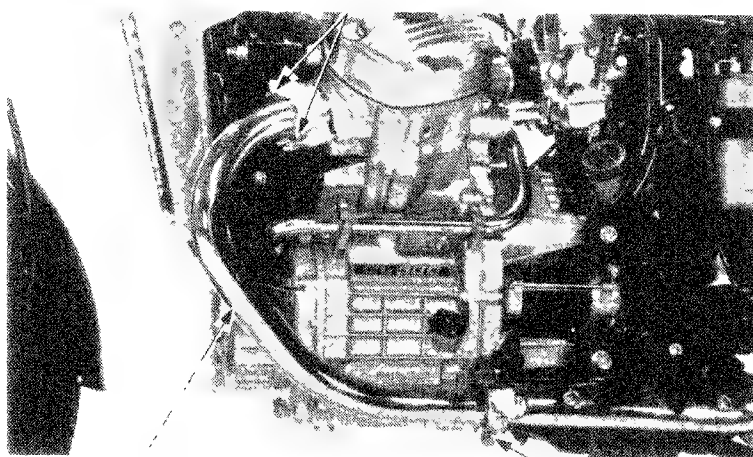
|                                 |                                             |
|---------------------------------|---------------------------------------------|
| Front engine hanger nut         | 30 - 40 N·m (3.0 - 4.0 kg·m, 22 - 29 ft·lb) |
| Front engine mount bolt (10 mm) | 45 - 70 N·m (4.5 - 7.0 kg·m, 33 - 51 ft·lb) |
| (12 mm)                         | 60 - 80 N·m (6.0 - 8.0 kg·m, 43 - 58 ft·lb) |
| Rear engine mount bolt (10 mm)  | 45 - 70 N·m (4.5 - 7.0 kg·m, 33 - 51 ft·lb) |
| (12 mm)                         | 60 - 80 N·m (6.0 - 8.0 kg·m, 43 - 58 ft·lb) |
| Rear drive shaft lock bolt      | 18 - 28 N·m (1.8 - 2.8 kg·m, 13 - 20 ft·lb) |
| Left foot peg bolt              | 30 - 40 N·m (3.0 - 4.0 kg·m, 22 - 29 ft·lb) |
| Passenger foot peg bolt         | 45 - 60 N·m (4.5 - 6.0 kg·m, 33 - 43 ft·lb) |
| Power chamber bolt              | 24 - 30 N·m (2.4 - 3.0 kg·m, 17 - 22 ft·lb) |
| Muffler band bolt               | 18 - 28 N·m (1.8 - 2.8 kg·m, 13 - 20 ft·lb) |



## ENGINE REMOVAL

1. Remove the water filter.
2. Remove the fuel and filter tank.
3. Remove the right and left side covers.
4. Remove the exhaust pipe clamp nuts.
5. Remove the exhaust pipe clamp bolt and remove the exhaust pipe.

EXHAUST PIPE CLAMP NUTS

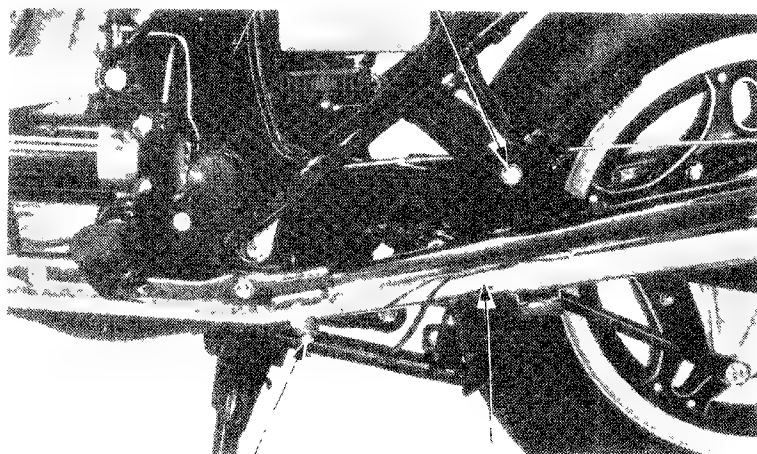


EXHAUST PIPE

CLAMP BOLT

6. Remove the muffler mounting bolts.
7. Remove the muffler clamp bolt and remove the muffler entirely.

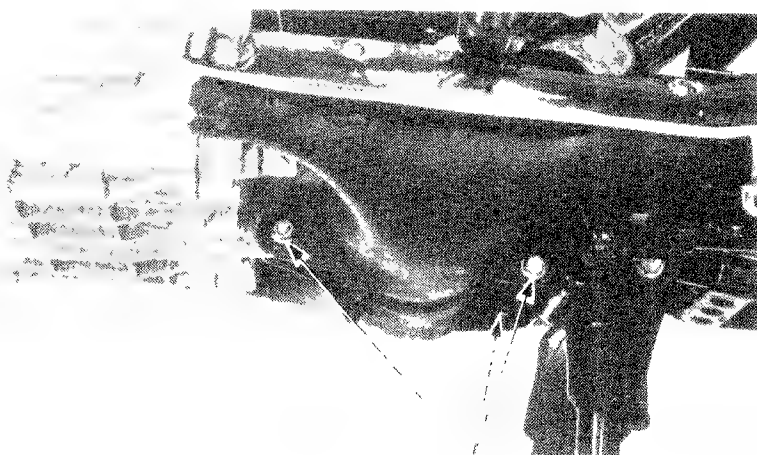
MOUNTING BOLT



CLAMP BOLT

MUFFLER

8. Remove the power chamber bolts.
9. Remove the power chamber.

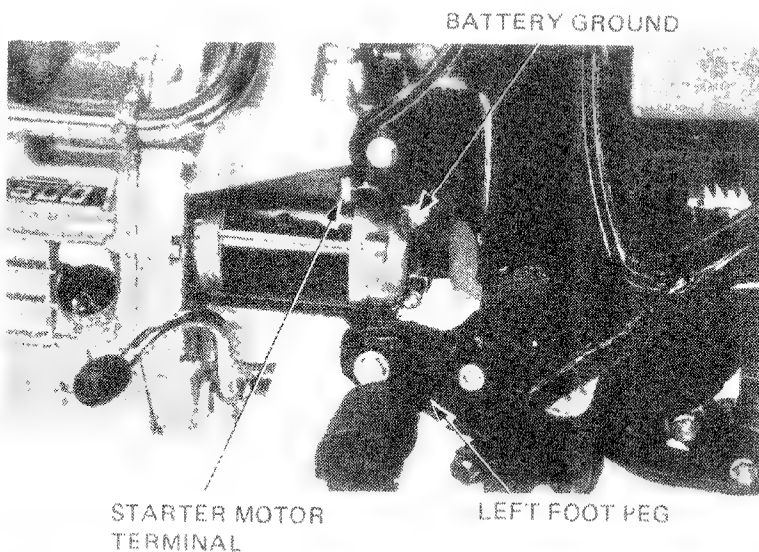


POWER CHAMBER BOLTS

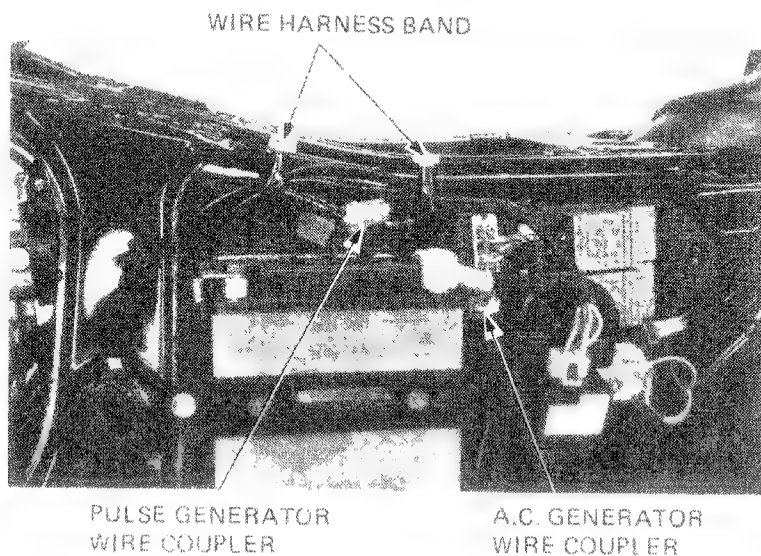


Disconnect the starter motor and battery ground cables.

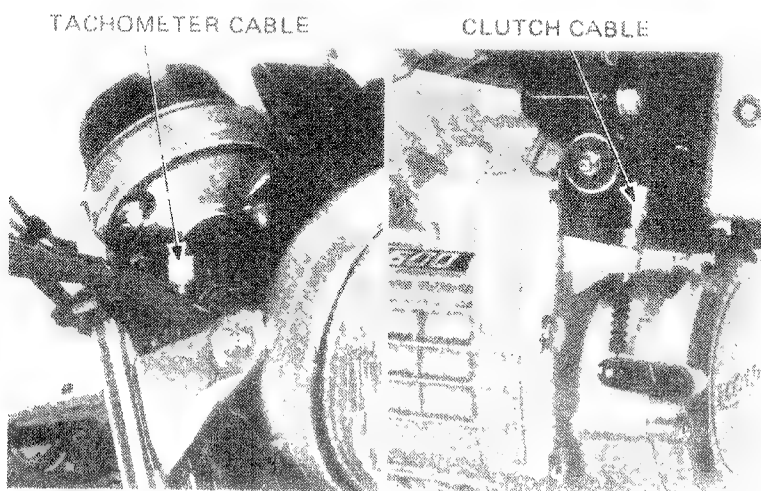
Remove the left foot peg bracket.



Remove the wire harness bands.  
Disconnect the pulse generator and A.C. generator cables at the couplers.  
Disconnect the neutral switch wire (Light green, Red).



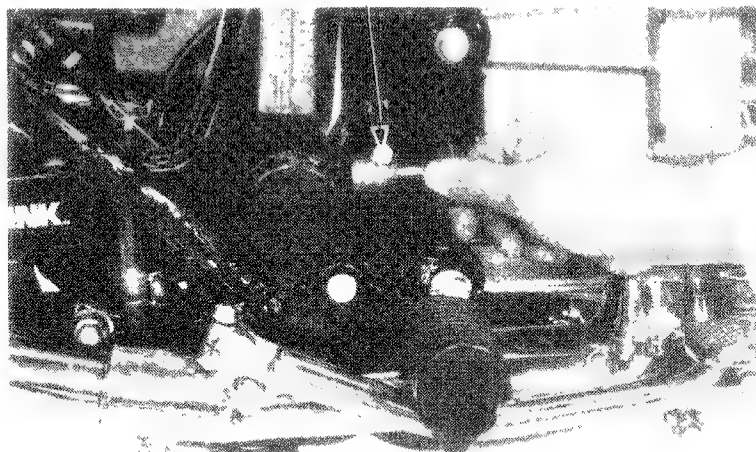
Disconnect the clutch cable at the lower end.  
Disconnect the tachometer cable at the tachometer.





Remove the drive shaft lock bolt.

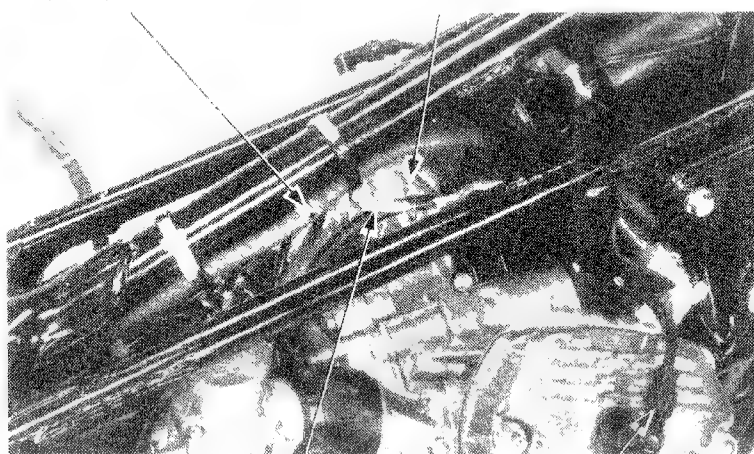
LOCK BOLT



Disconnect the siphon tube at the connection.  
Disconnect the thermostatic switch (Green/Blue)  
and oil pressure switch (Blue/Red) wires.  
Remove the spark plug caps

SIPHON TUBE

THERMOSTATIC SWITCH WIRE

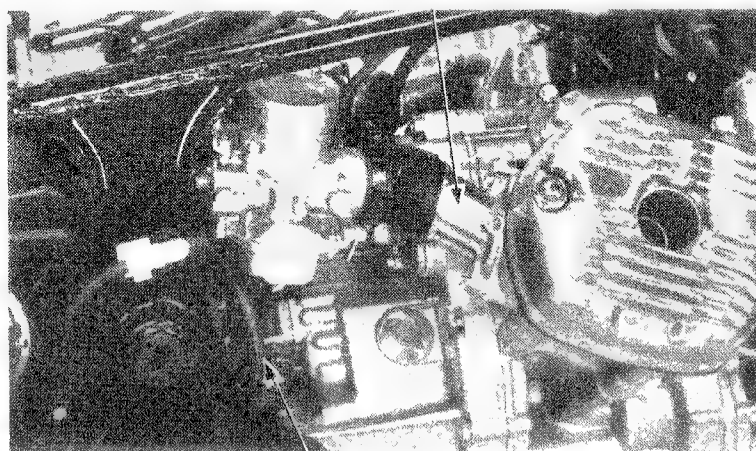


OIL PRESSURE  
SWITCH WIRE

SPARK PLUG  
CAP

Remove the carburetor intake pipes.  
Disconnect the crankcase breather tube.

INTAKE PIPE



BREATHER TUBE



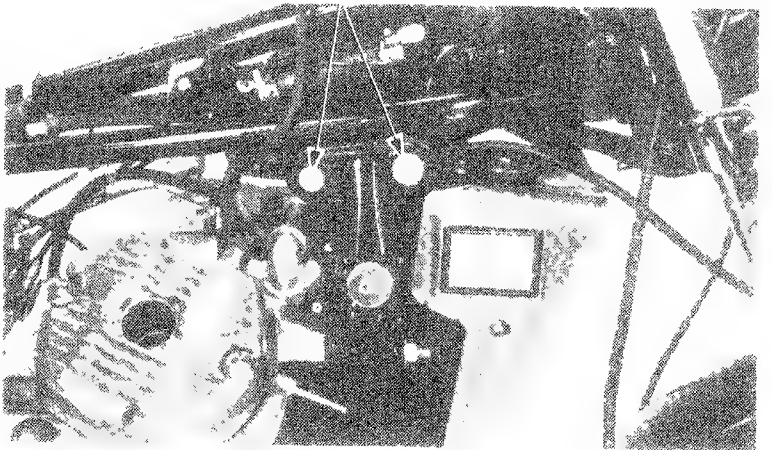
2. Remove the engine from the engine frame by moving the engine rear mounting bolts.

ENGINE REAR MOUNTING BOLTS



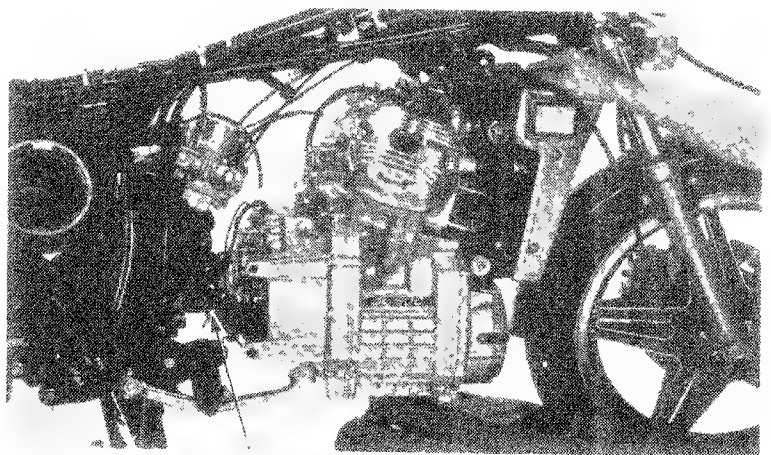
3. Remove the engine from the engine frame by moving the engine front mounting bolts.

ENGINE FRONT MOUNTING BOLTS



4. Remove the drive shaft from the drive shaft assembly by moving the gas bracket and moving the engine frame.

**CAUTION**  
The engine must be continuously adjusted during engine removal and installation to prevent damage to mounting and threads on harnesses and cables.



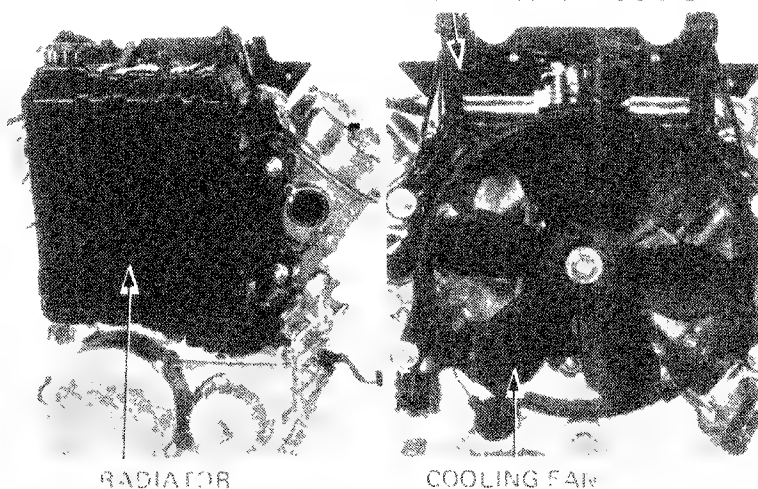
DRIVE SHAFT



## ENGINE REMOVAL/INSTALLATION

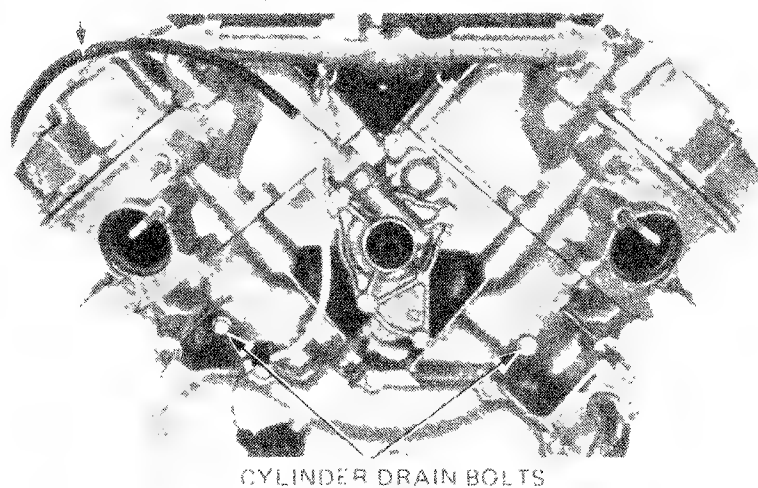
Remove the fan and from the radiator (Page 9-3).  
Remove the radiator cover and radiator (Page 9-5).  
Remove the cooling fan and front engine hanger (Page 9-5).

FRONT ENGINE MOUNTS



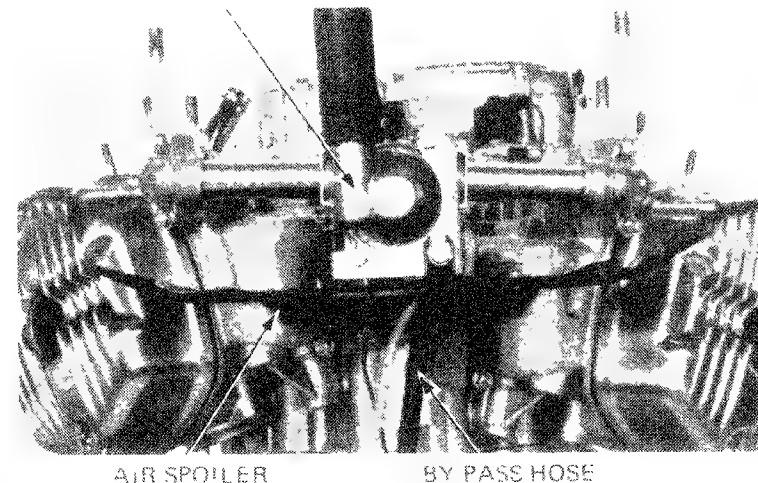
Remove the tachometer cable.  
Remove the drain bolts and drain the coolant from the cylinders.

TACHOMETER CABLE



Disconnect the by-pass hose.  
Remove the air spoiler thermostat and water pipes.

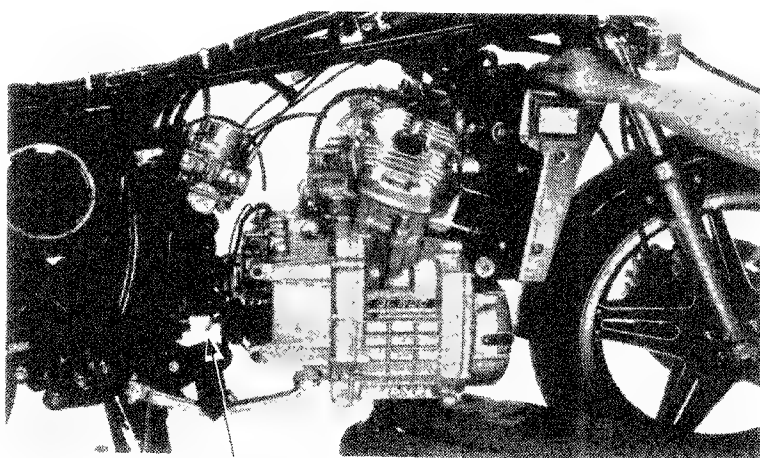
THERMOSTAT CASE



## ENGINE INSTALLATION

Installation sequence is essentially the reverse of removal.

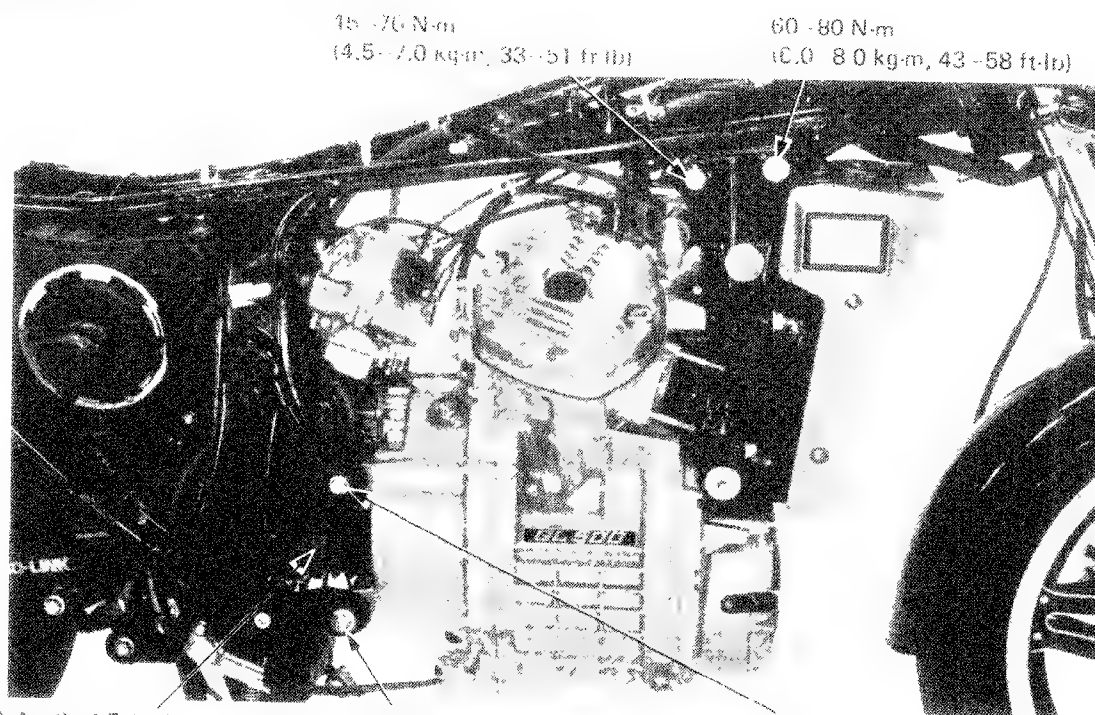
1. Attach engine to rear suspension with a jack and align the drive shaft with the final shaft.
2. Insert the drive shaft into the final shaft assembly by using the engine jackstand.



DRIVE SHAFT

3. Check to see that the final drive splines are properly seated from the end of the drive shaft.
4. Lubricate the final shaft splines with light oil-based multipurpose grease (NLGI No. 2, 30S, 500 level) before installation.
5. Align the mounting surfaces carefully to prevent damage to mounting bolt threads, mounting surfaces and gaskets.
6. Tighten nuts and washers properly. (Page 3-7)

After the engine is mounted, bolt and drive shaft lock washers (Page 3-7).



15-20 N·m  
(4.5-7.0 kg-m, 33-51 ft-lb)

60-80 N·m  
(6.0-8.0 kg-m, 43-58 ft-lb)

FINAL SHAFT LOCK BOLT  
18-25 N·m  
(1.8-2.5 kg-m, 13-20 ft-lb)

60-80 N·m  
(6.0-8.0 kg-m, 43-58 ft-lb)

45-70 N·m  
(4.5-7.0 kg-m, 33-51 ft-lb)

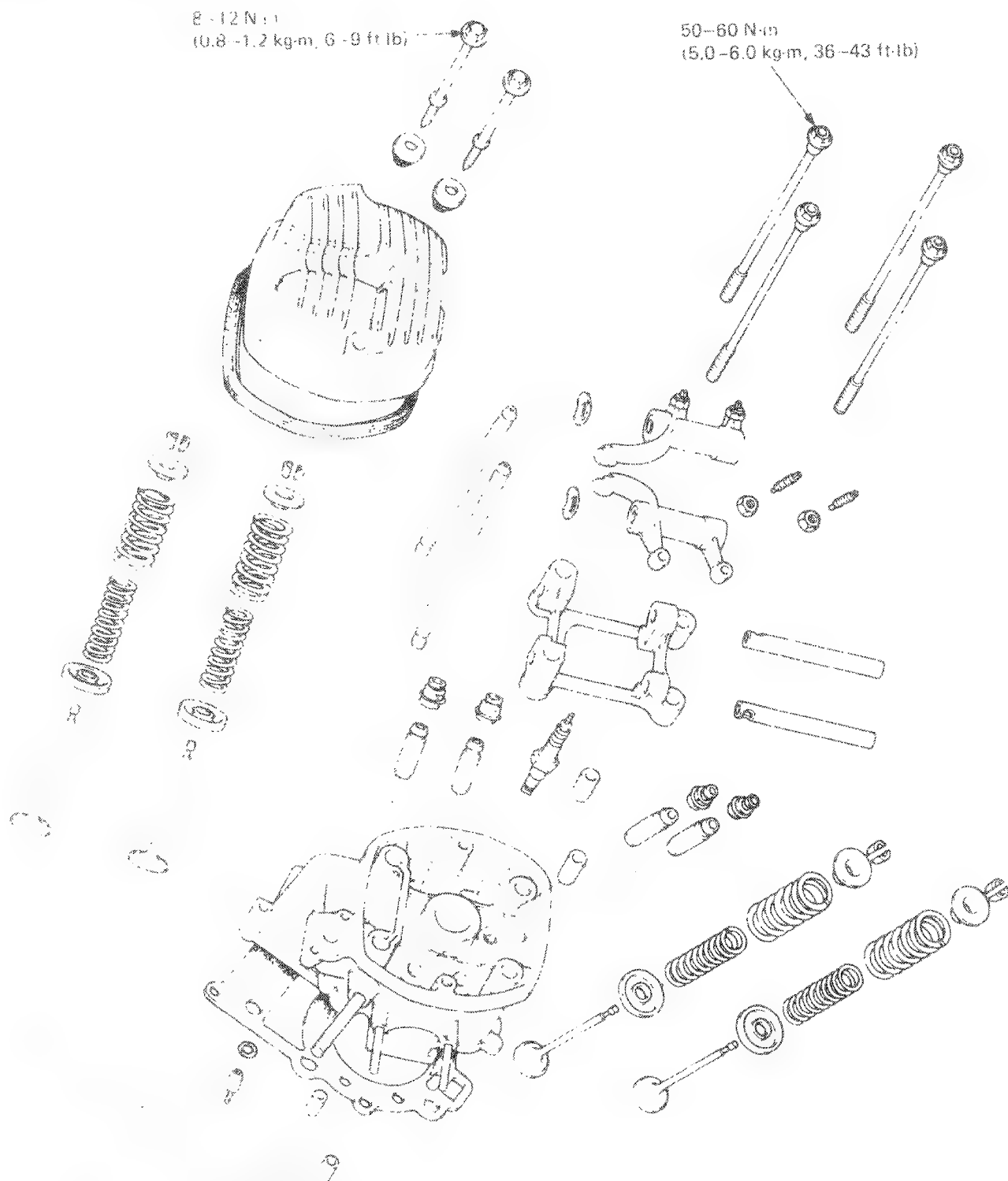
NOTE:

1. Fill the engine with the recommended oil and coolant.
2. Perform the following inspections and adjustments:
  - Chain free play (Page 3-14)
  - Radiator coolant (Page 3-10)
  - Engine oil level (Page 2-2)
  - Engine oil and coolant leakage.



**HONDA**  
GL500  
GL500 INTERSTATE

## CYLINDER HEAD/VALVE





**HONDA**  
GL500  
GL500 INTERSTATE

# 6. CYLINDER HEAD/VALVE

|                                       |      |
|---------------------------------------|------|
| SERVICE INFORMATION                   | 6-1  |
| TROUBLESHOOTING                       | 6-2  |
| ROCKER ARM/CYLINDER HEAD REMOVAL      | 6-3  |
| CYLINDER HEAD DISASSEMBLY             | 6-7  |
| VALVE GUIDE REPLACEMENT               | 6-9  |
| VALVE SEAT INSPECTION AND GRINDING    | 6-10 |
| CYLINDER HEAD ASSEMBLY                | 6-13 |
| ROCKER ARM ASSEMBLY                   | 6-14 |
| CYLINDER HEAD/ROCKER ARM INSTALLATION | 6-14 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- For cylinder head maintenance and inspection can be accomplished with the engine installed. Before removing the cylinder heads, it is necessary to drain coolant from the cylinder water jackets by removing the drain bolts.
- The engine must be cool before removing the cylinder head.

### TOOLS

#### Special

|                                       |                                |
|---------------------------------------|--------------------------------|
| Valve guide driver attachment (IN/EX) | 07934-4150000                  |
| Valve guide reamer (IN/EX)            | 07984-6110000 or 07984-6570100 |

#### Common

|                                      |                                |
|--------------------------------------|--------------------------------|
| Valve spring compressor              | 07757-0010000                  |
| Valve guide remover (6.6 mm) (IN/EX) | 07742-0010200 or 07942-6570100 |

### TORQUE VALUES

|                                 |                                             |
|---------------------------------|---------------------------------------------|
| Clean valve bolt                | 8 - 12 N·m (0.8 - 1.2 kg-m, 6 - 9 ft-lb)    |
| Cylinder head bolt              | 50 - 60 N·m (5.0 - 6.0 kg-m, 36 - 43 ft-lb) |
| Front engine mount bolt (10 mm) | 45 - 70 N·m (4.5 - 7.0 kg-m, 33 - 51 ft-lb) |
| (12 mm)                         | 80 - 80 N·m (6.0 - 8.0 kg-m, 43 - 58 ft-lb) |
| Front engine hanger nut         | 30 - 40 N·m (3.0 - 4.0 kg-m, 22 - 29 ft-lb) |
| Timing fan bolt                 | 20 - 25 N·m (2.0 - 2.5 kg-m, 14 - 18 ft-lb) |



## SPECIFICATIONS

|                             |                         | Unit: mm (in)                                    |                                         |
|-----------------------------|-------------------------|--------------------------------------------------|-----------------------------------------|
| Item                        |                         | Standard                                         | Service Limit                           |
| Cylinder compression (cold) |                         | 1,200 kPa<br>(1.20 kg/cm <sup>2</sup> , 171 psi) |                                         |
| Rocker arms                 | Shafts and holders      | Rocker arm I.D.                                  | 15.000 - 15.018<br>(0.5906 - 0.5913)    |
|                             |                         | Rocker arm shaft O.D.                            | 14.966 - 14.984<br>(0.5892 - 0.5899)    |
|                             | Rocker arm holder I.D.  |                                                  | 14.988 - 15.006<br>(0.5901 - 0.5908)    |
|                             |                         |                                                  | 15.03 (0.592)                           |
|                             | Exhaust                 | Outer (IN)                                       | 50.40 (1.984)                           |
|                             |                         | Inner (IN)                                       | 50.30 (1.980)                           |
|                             |                         | Outer (EX)                                       | 50.40 (1.984)                           |
|                             |                         | Inner (EX)                                       | 50.30 (1.980)                           |
|                             | Pushrod length          | Outer (IN)                                       | 28 kg/39.9 mm<br>(61.7 lbs/1.5709 in)   |
|                             |                         | Inner (IN)                                       | 11.5 kg/37.9 mm<br>(25.4 lbs/1.4921 in) |
|                             |                         | Outer (EX)                                       | 28.5 kg/39.9 mm<br>(62.8 lbs/1.5709 in) |
|                             |                         | Inner (EX)                                       | 11.5 kg/37.9 mm<br>(25.4 lbs/1.4921 in) |
| Valves and valve guides     | Stem O.D.               | (IN)                                             | 6.580 - 6.590<br>(0.2591 - 0.2594)      |
|                             |                         | (EX)                                             | 6.550 - 6.560<br>(0.2579 - 0.2583)      |
|                             | Guide I.D.              | (IN)                                             | 6.600 - 6.620<br>(0.2598 - 0.2606)      |
|                             |                         | (EX)                                             | 6.600 - 6.620<br>(0.2598 - 0.2606)      |
|                             | Stem-to-guide clearance | (IN)                                             | 0.10 (0.040)                            |
|                             |                         | (EX)                                             | 0.10 (0.040)                            |
|                             | Valve seat width        |                                                  | 1.1 - 1.3 (0.04 - 0.05)                 |
|                             | Warpage                 |                                                  | 0.10 (0.040)                            |

## TROUBLESHOOTING

Engine problems are usually performance related which can be diagnosed by a compression test, or are noises which are usually related to the top-end with a sounding rod or stethoscope.

## Low Compression or Uneven Compression

1. Valve
  - a. Incorrect valve clearance
  - b. Bent or bent valves
  - c. Broken valve spring
2. Incorrect valve timing
3. Striking valve
4. Cylinder head
  - a. Leaking or damaged head gasket
  - b. Warped or cracked cylinder head
5. Cylinder and piston

## High Compression

1. Excessive carbon build-up on piston crown or combustion chamber

## Excessive Noise

1. Incorrect valve adjustment
2. Sticking valve or broken valve spring
3. Damaged rocker arm or camshaft
4. Bent push rod

## Contaminated Engine Oil or Coolant

1. Leaking head gasket





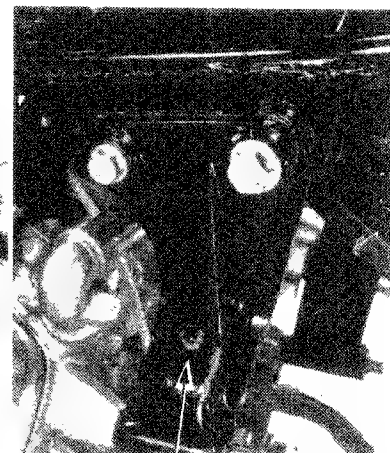
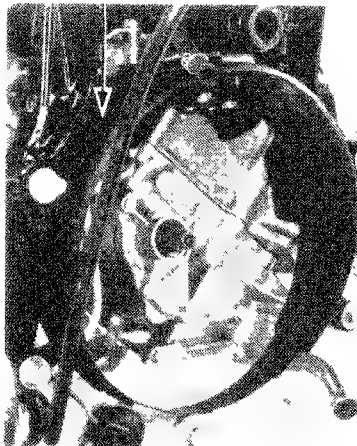
## ROCKER ARM/CYLINDER HEAD REMOVAL

### NOTE

Rocker arm can be removed without removing the cooling system.

Remove the radiator and cooling fan (page 9-5).  
Remove the cooling fan cover and front engine hanger.

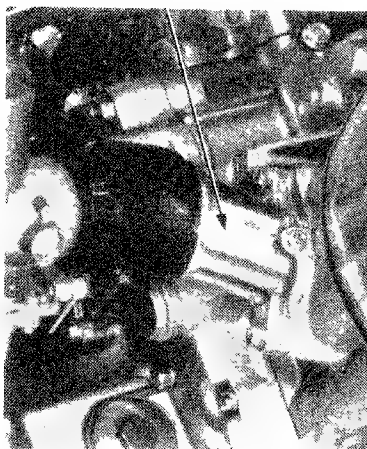
COOLING FAN COVER



FRONT ENGINE HANGER

Remove the carburetor intake pipe.  
Remove the exhaust pipe.

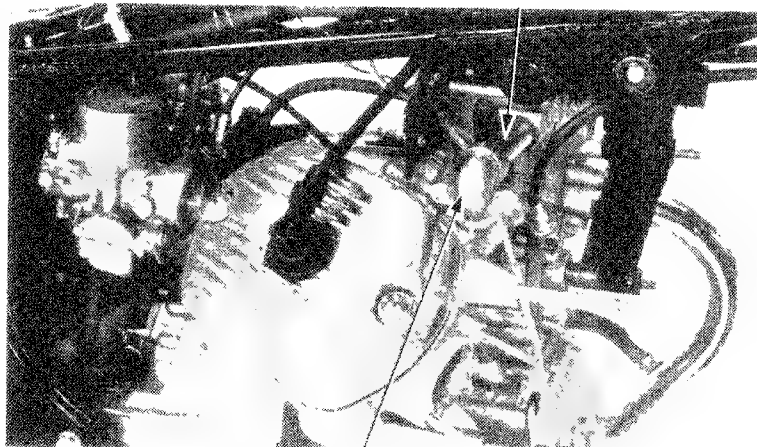
INTAKE PIPE



EXHAUST PIPE

Remove the water pipe joints and water pipes.

WATER PIPE



WATER PIPE JOINT

## CYLINDER HEAD/VALVE



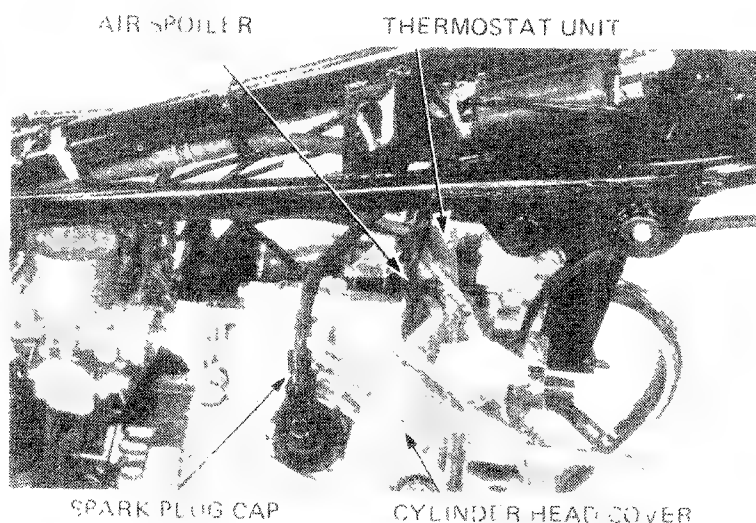
**HONDA**  
GL500  
GL500 (INTERSTATE)

Remove the air spoiler.

Remove the thermostat unit with bracket (Page 9-4).

Remove the spark plug cap.

Remove the cylinder head cover.



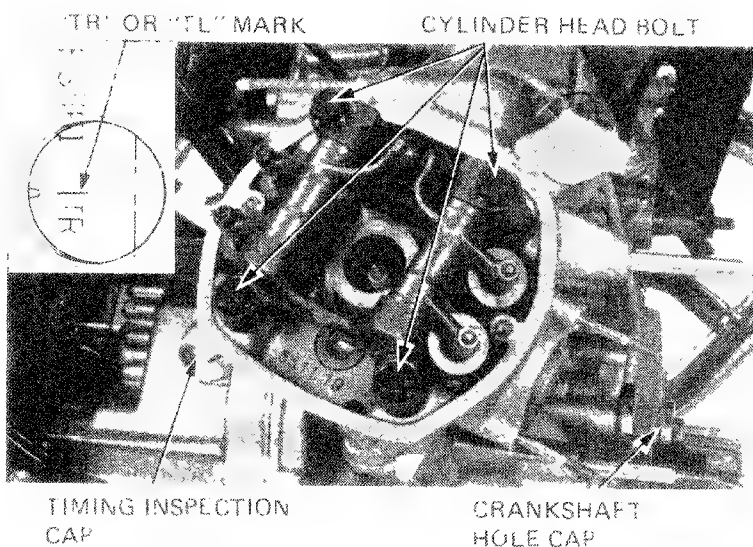
Remove the crankshaft hole cap and timing inspection cap.

Bring the piston to T.D.C. of the compression stroke by turning the crankshaft.

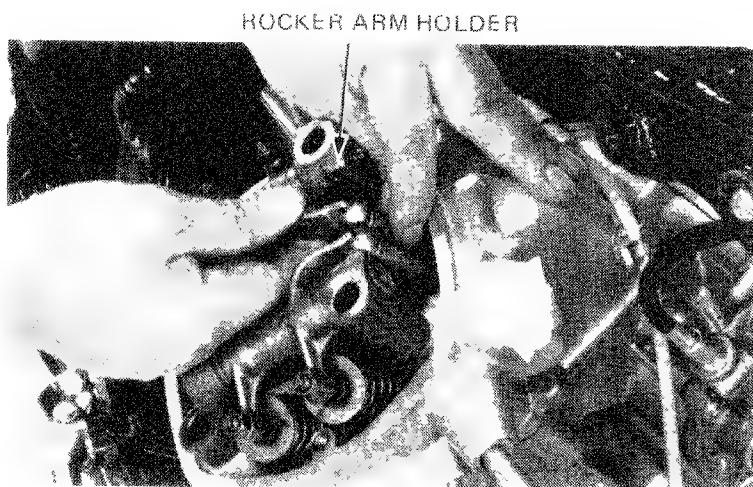
### NOTE

- Align the index mark with the "TR" mark for the right cylinder.
- Align the index mark with the "TL" mark for the left cylinder.

Loosen the cylinder head bolts in a crisscross pattern in two or more steps.

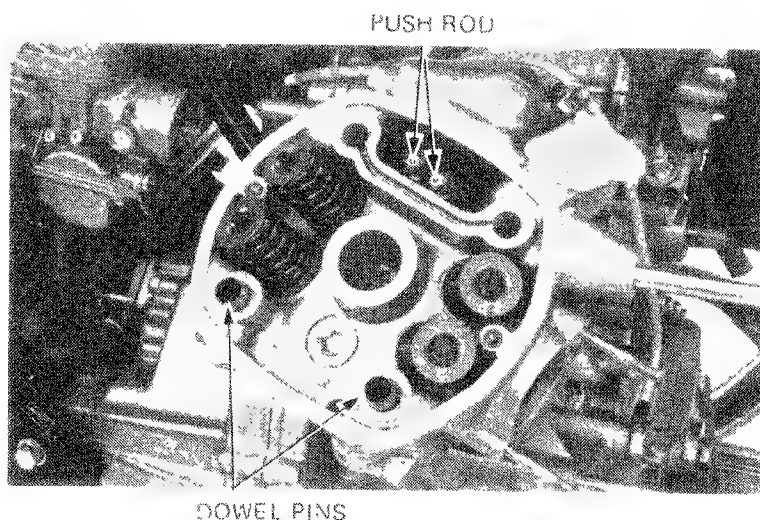


Remove the rocker arm holder assembly.

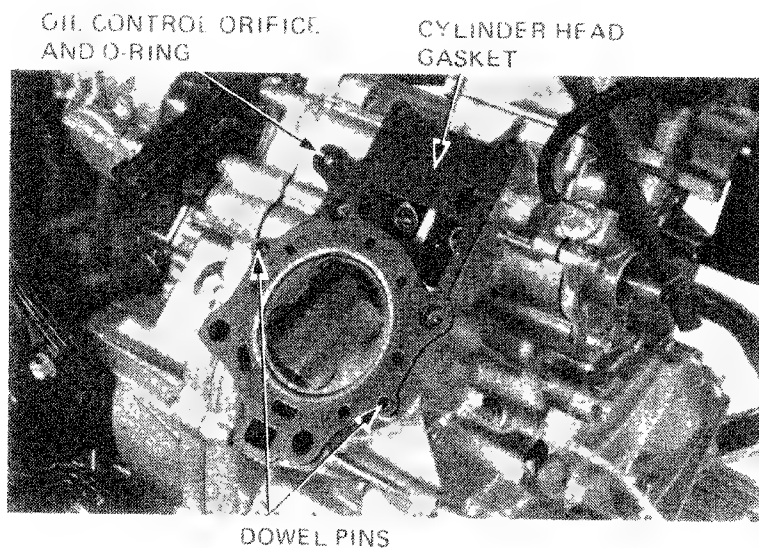




Remove the push rods.  
Remove the cylinder head lower pins.  
Remove the cylinder head.

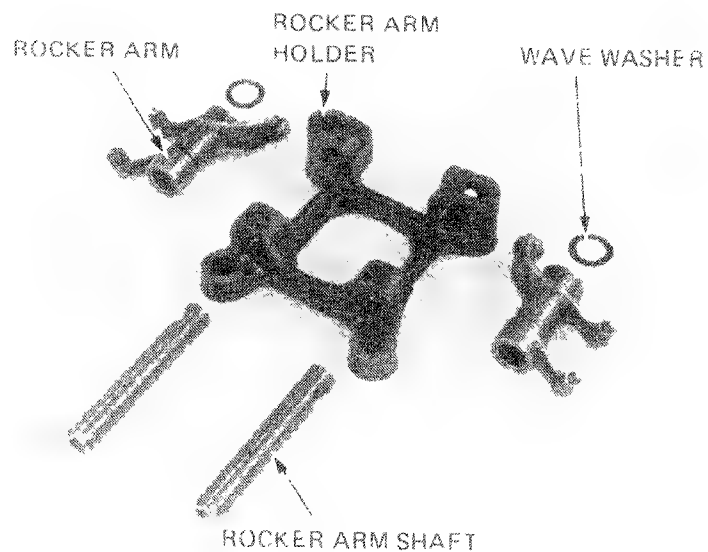


Remove the cylinder base dowel pins.  
Remove the oil control orifice and O-ring.  
Remove the cylinder head gasket.



#### ROCKER ARM HOLDER DISASSEMBLY

Remove the rocker arm shafts and remove the wave washer and rocker arms.



**ROCKER ARM SHAFT INSPECTION**

Measure the O.D. of each rocker arm shaft.  
Examine the wave washers for damage.  
Inspect each shaft for damage, scoring or nicks.

**SERVICE LIMIT: 14.95 mm (0.589 in)**

**ROCKER ARM HOLDER INSPECTION**

Measure the rocker arm holder I.D.

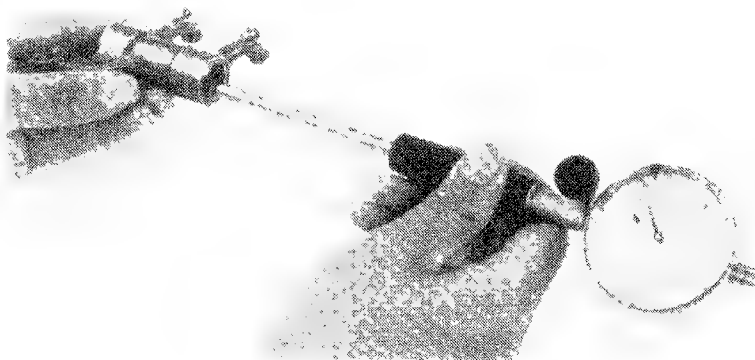
**SERVICE LIMIT: 15.03 mm (0.592 in)**

**ROCKER ARM INSPECTION**

Inspect each rocker arm for scoring, damage, or fragment holes. Measure the arm I.D. of each rocker.

**SERVICE LIMIT: 15.04 mm (0.592 in)**

If a rocker arm shows wear or damage to the adjuster screw or push rod contact faces, inspect the valve and stem contact faces for scoring scratches, or evidence of insufficient lubrication.  
Inspect the push rods for wear, damage and trueness.





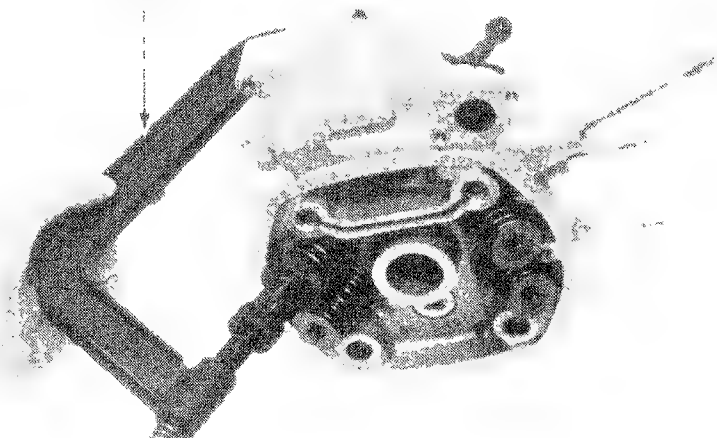
## CYLINDER HEAD DISASSEMBLY

Remove the valve spring cotters, retainers, spring and oil seal.

### NOTE

- 1. Do not compress the valve springs more than necessary to remove the cotters.
- 2. Mark all parts to assure original assembly.

VALVE SPRING COMPRESSOR



Remove all dirt deposits from the combustion chamber.

Remove all gasket material from the head surfaces.

### NOTE

- 1. Do not damage the gasket surfaces.
- 2. Avoid dropping gasket material into the combustion passages.
- 3. Gaskets will come off easier if soaked with oil.



## CYLINDER HEAD INSPECTION

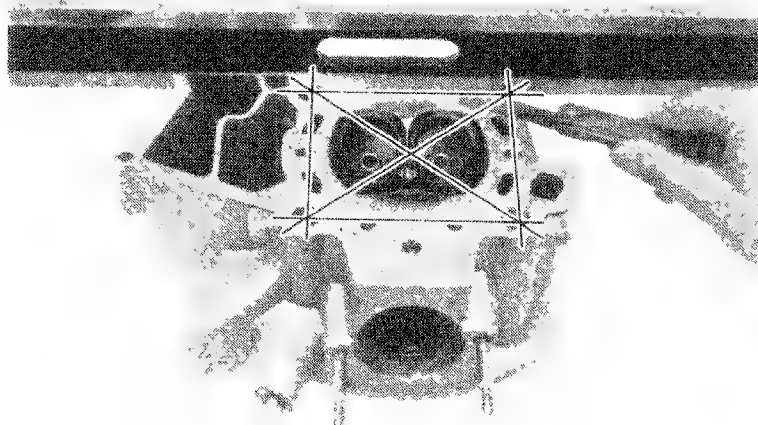
Inspect the rock plug hole and valve areas carefully for cracks.

Check the cylinder head for warpage with a straight edge and feeler gauge.

**SERVICE LIMIT: 0.10 mm (0.040 in)**

### NOTE

- 1. Check for warpage in an X pattern.





## CYLINDER HEAD/VALVE

### VALVE SPRING INSPECTION

Measure the free length of the inner and outer valve springs.

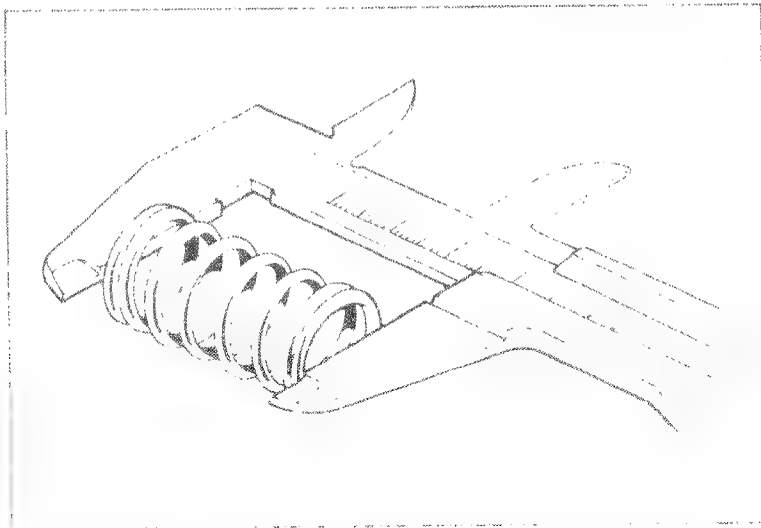
#### SERVICE LIMITS:

INNER (IN): 48.40 mm (1.905 in)

(EX): 48.40 mm (1.905 in)

OUTER (IN): 48.50 mm (1.909 in)

(EX): 48.50 mm (1.909 in)



### VALVE INSPECTION

Inspect valves for aspect for freedom, scoring, scoring, or abnormal stem and wear.

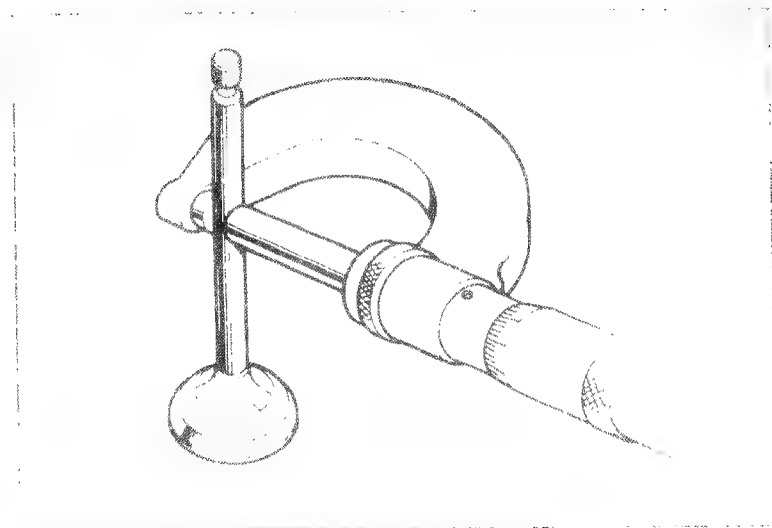
Check the valve movement in the guide.

Measure and record each valve stem O.D.

#### SERVICE LIMITS:

(IN): 6.54 mm (0.258 in)

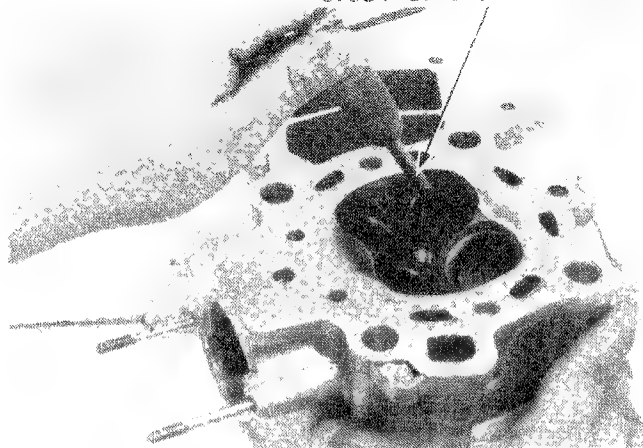
(EX): 6.54 mm (0.258 in)



### VALVE GUIDE INSPECTION

Use a valve guide reamer to remove any carbon build up from the guide, then check clearance.

VALVE GUIDE REAMER  
07984-6570100 or 07984-6110000







## STEM TO GUIDE CLEARANCE INSPECTION

Measure and record each valve guide I.D. using a ball gauge or inside micrometer.

### SERVICE LIMITS:

(IN/EX): 6.70 mm (0.264 in)

Measure the stem to guide clearance.

### SERVICE LIMITS:

(IN): 0.10 mm (0.040 in)

(EX): 0.10 mm (0.040 in)

### NOTE:

\* If the stem to guide clearance exceeds the service limit, determine if a new guide with standard dimensions would bring the clearance within tolerance.

\* To replace guides as necessary and learn to fit.

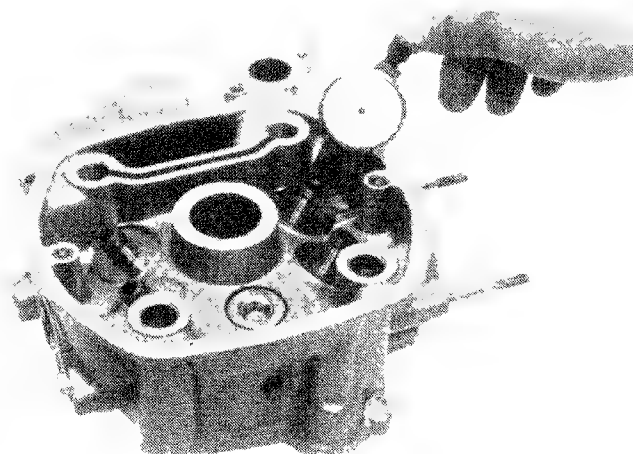
## VALVE GUIDE REPLACEMENT

If the stem-to-guide clearance still exceeds the service limits with new guides, replace the valves and guides.

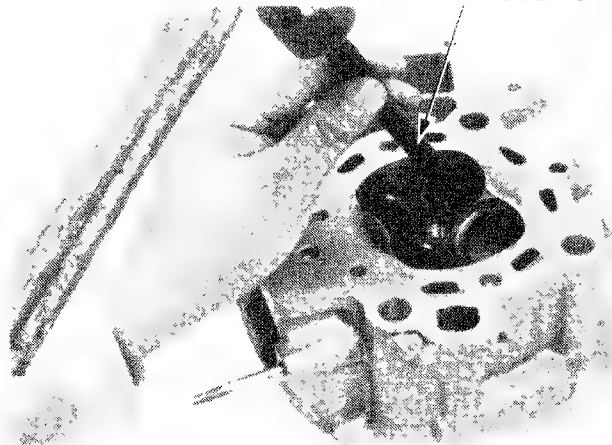
### NOTE:

Do not damage the cylinder head when replacing valve guides.

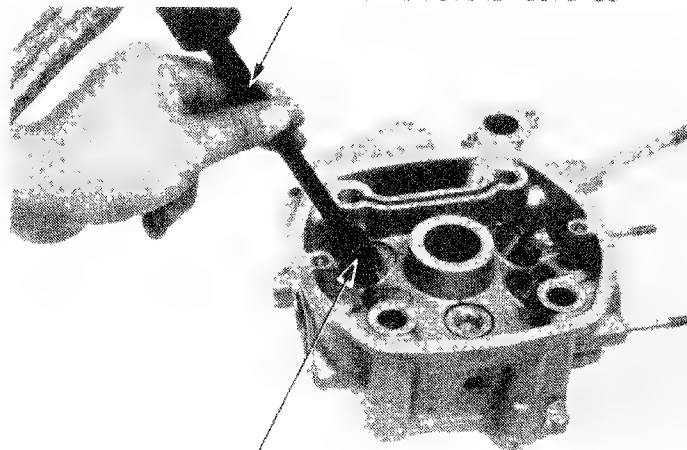
Support the cylinder head and drive out the guide from the valve port.



VALVE GUIDE REMOVER 07942-6570100



VALVE GUIDE REMOVER 07942-6570100



ATTACHMENT 07943-4150000



## CYLINDER HEAD/VALVE

VALVE GUIDE REAMER  
07984-6570100 or 07984-6110000

Ream the new valve guides after installation.

### NOTE

- Use cutting oil on the reamer during this operation.
- It is important that the reamer be rotated when it is inserted or removed.
- Clean the head thoroughly of any particles.

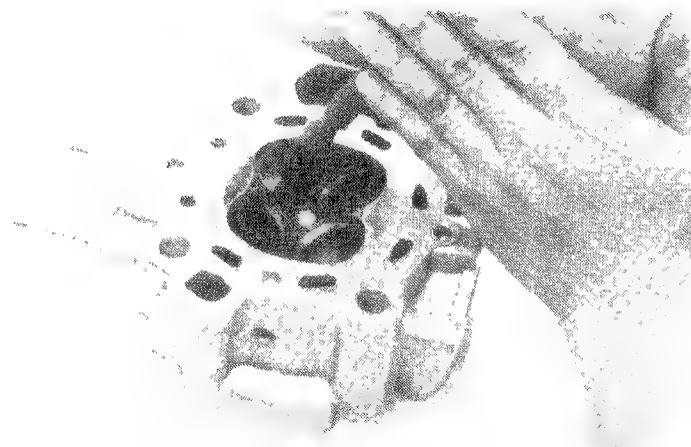


## VALVE SEAT INSPECTION AND GRINDING

Clean all intake and exhaust valves thoroughly to remove carbon deposits.

Apply a light coating of Prussian Blue to each valve seat. Lap each valve and seat using a rubber hose or other hand-lapping tool.

Remove and inspect each valve.



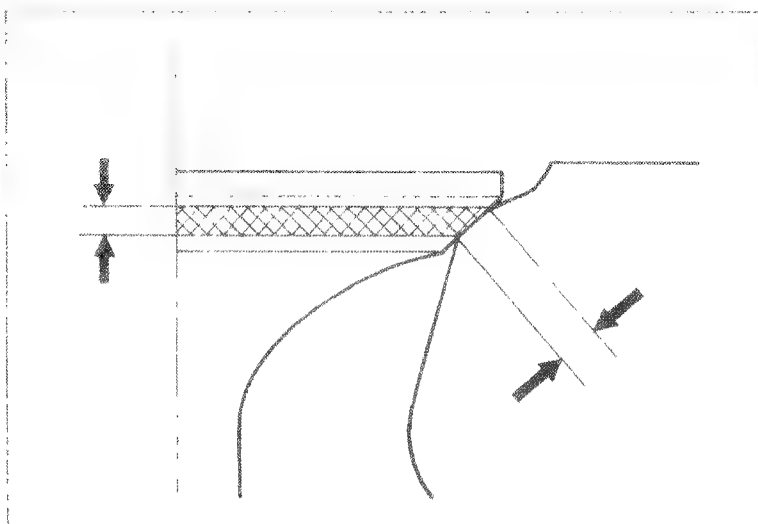
### CAUTION

*The valve cannot be ground. If the valve face is burned or badly worn or if it contacts the seat only, replace the valve.*

1. Measure the valve seat width.

|               |                                  |
|---------------|----------------------------------|
| STANDARD      | 1.1 - 1.3 mm<br>(0.04 - 0.05 in) |
| SERVICE LIMIT | 2.0 mm (0.08 in)                 |

If the seat is too wide, too narrow or has low spots, the seat must be ground.





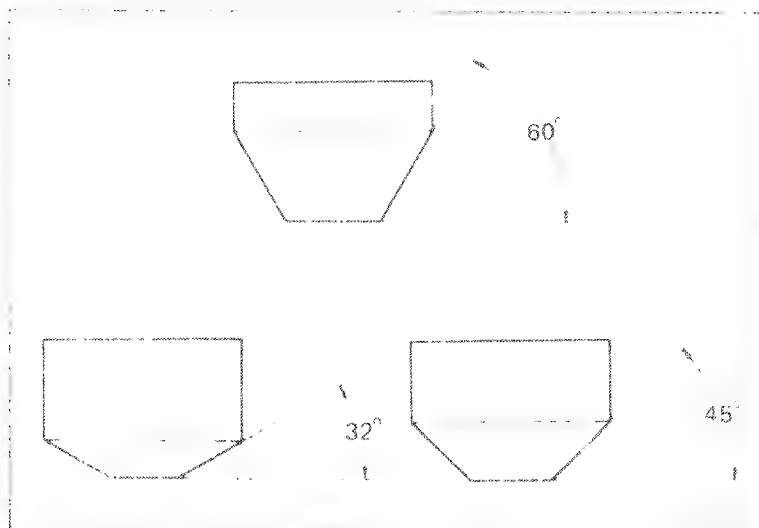
## VALVE SEAT CUTTERS

HONDA VALVE SEAT CUTTERS, grinder or adjustable valve seat refacing equipment are recommended to correct a worn valve seat.

### NOTE

Follow the refacer manufacturer's operating instructions.

Honda valve seat cutters are not available in U.S.A.



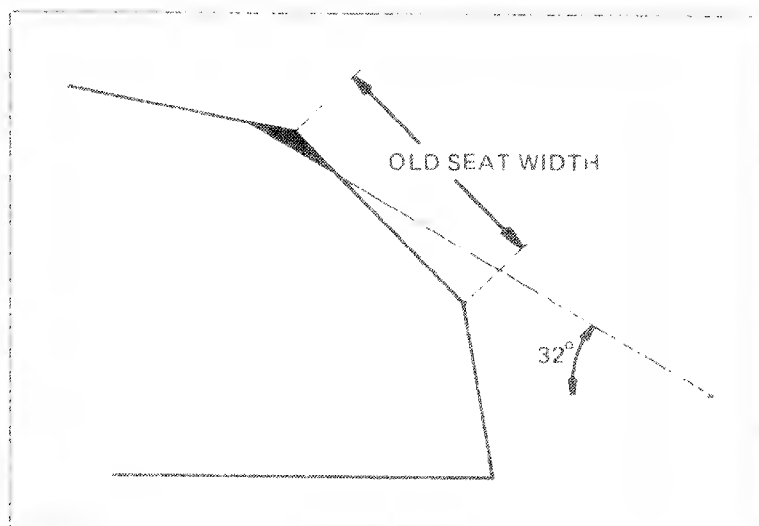
## VALVE SEAT REFACING

Use a 45 degree cutter to remove any roughness or irregularities from the seat.

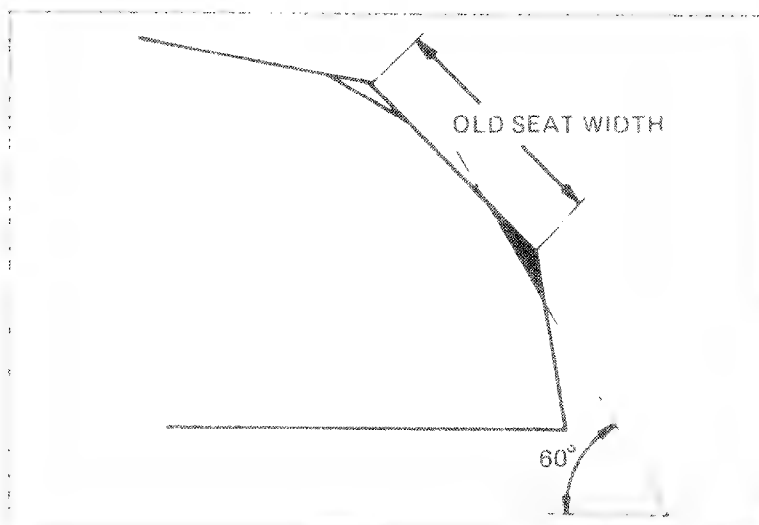
### NOTE

Reface the seat with a 45 degree cutter when the valve guide is replaced.

Use a 32 degree cutter to remove the top 1/4 of the existing valve seat material.



Use a 60-degree cutter to remove the bottom 1/4 of the old seat. Remove the cutter and inspect the surface you have just removed.



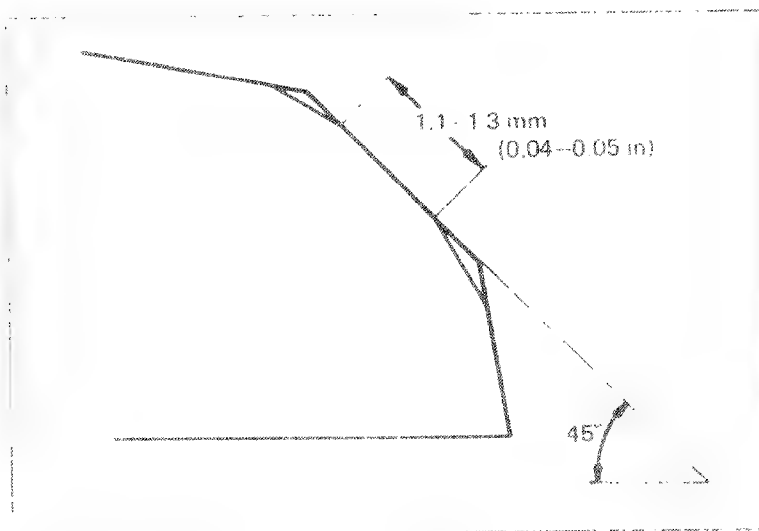


## CYLINDER HEAD/VALVE

Use a 45 degree flat cutter and cut the seat 1.1-1.3 mm (0.04-0.05 in).

### NOTE

Make sure that all pitting and irregularities are removed. Refinish, if necessary.



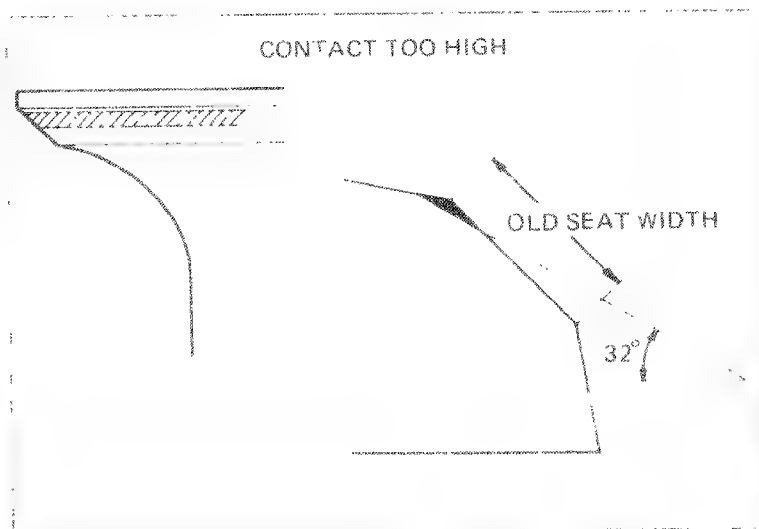
Apply a thin coating of Prussian Blue to the valve seat.

Press the valve through the valve guide and onto the seat to make a clear pattern.

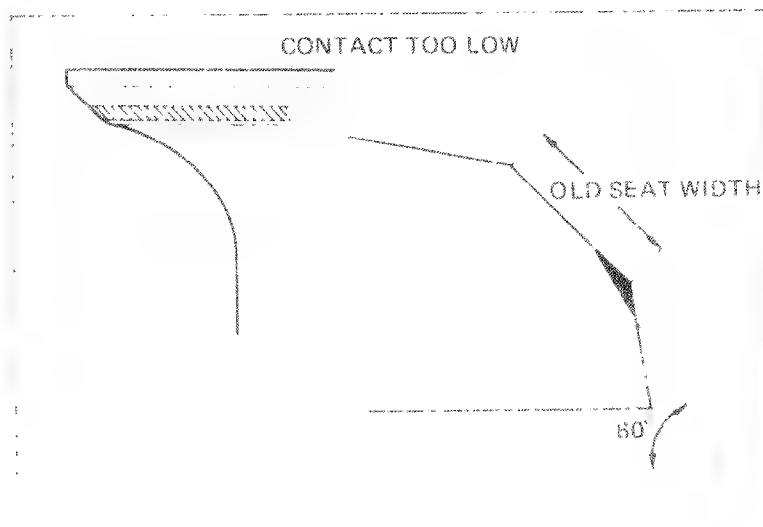
### NOTE

The location of the valve seat in relation to the valve face is very important for good sealing.

If the contact area is too high on the valve, the seat must be lowered using a 32 degree flat cutter.



If the contact area is too low on the valve, the seat must be raised using a 60 degree inner cutter.



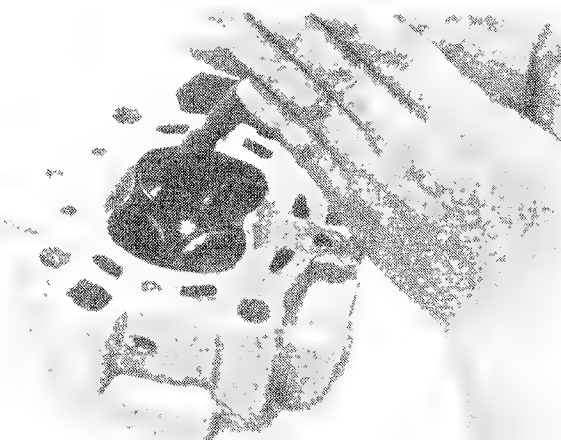


Adjust the seat to specifications, using a 45 degree file.

After setting the seat, apply lapping compound to the valve face, and lap the valve using light pressure. After lapping, wash all residual compound off the cylinder head and valve.

**NOTE**

Do not allow lapping compound to enter the spring.

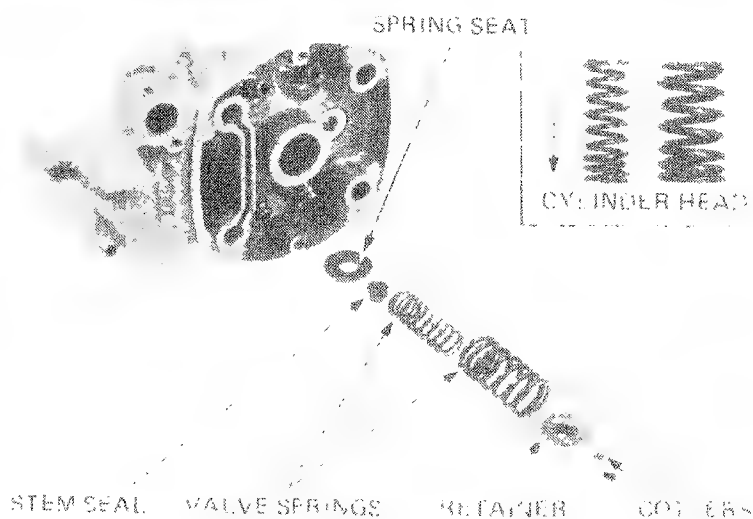


## CYLINDER HEAD ASSEMBLY

Install the valve stem seals and spring seats. Lubricate the valve stems with oil, and insert the valves into the guides.  
Install the valve springs and retainers.

**NOTE**

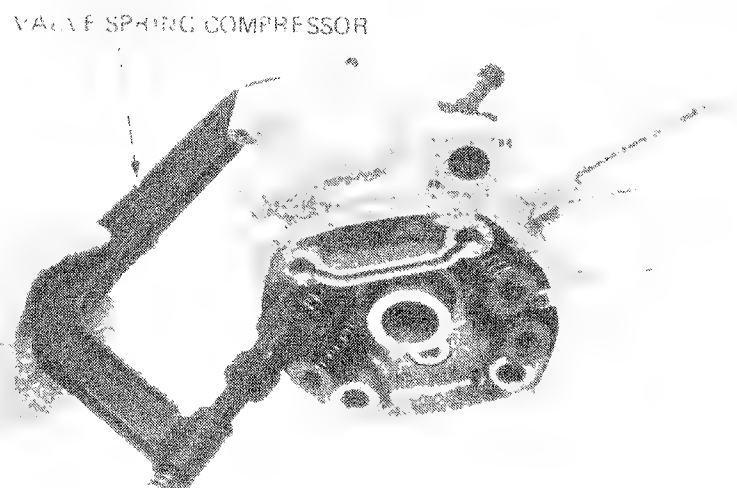
Install the valve springs with the tightly wound coils facing the head.  
Replace the stem seals with new ones whenever disassembled.



Install the valve coilers.

**CAUTION**

To prevent loss of tension, do not compress the valve spring more than necessary.





## CYLINDER HEAD/VALVE

1. Tighten the valve stems gently with a soft hammer to the correct torque setting.

### NOTE

Support the cylinder head above the work bench surface to prevent damage.



## ROCKER ARM ASSEMBLY

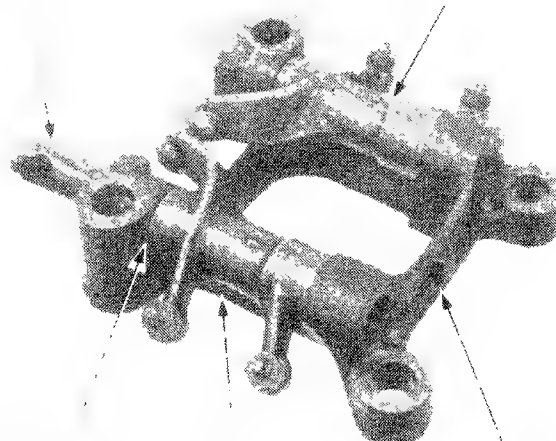
Assemble the rocker arm, shafts and wave washers.

### NOTE

Note the rocker arm shaft direction.  
Assemble each shaft before assembly.

ROCKER ARM SHAFT

ROCKER ARM (EX)



WAVE WASHER

ROCKER ARM (IN)

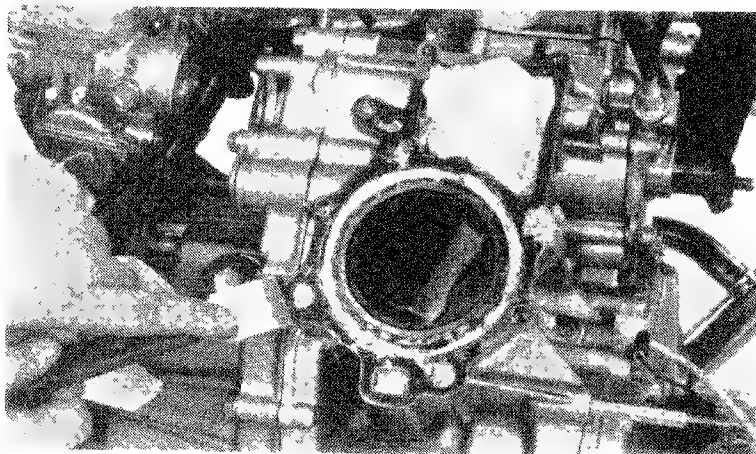
ROCKER ARM  
HOLDER

## CYLINDER HEAD/ROCKER ARM INSTALLATION

1. Clean the gasket surfaces of any gasket material.

### NOTE

Do not damage the gasket surfaces.



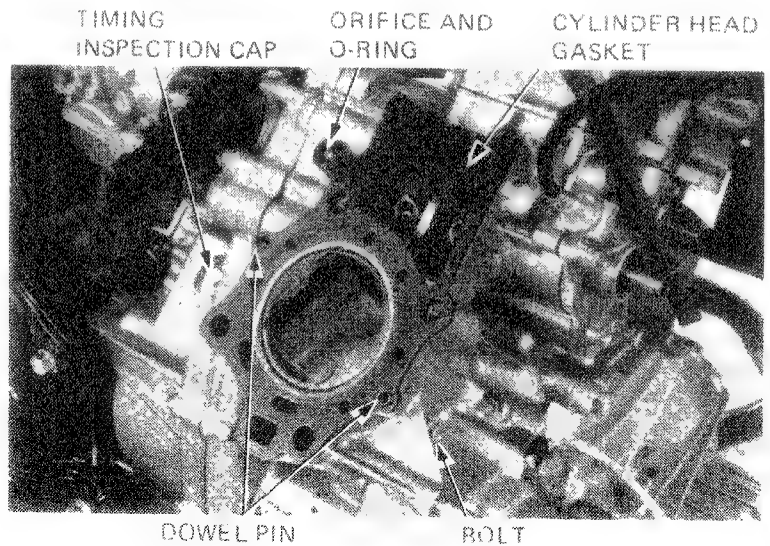




Install the O-rings and cylinder base dowel pins.  
Coat the cylinder and head surfaces with liquid sealer and install the head gasket.  
Make sure that the oil orifices are not obstructed by the gaskets.  
Install the cylinder drain bolts.  
Remove the timing inspection cap.  
Check the timing mark to be certain that the cylinder to be serviced is at T.D.C. on the compression stroke.

**NOTE**

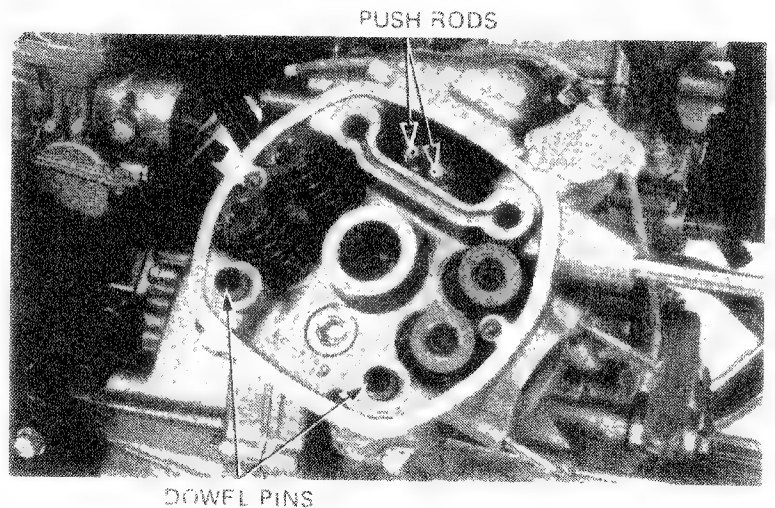
- Align the index mark with the "TR" mark for the right cylinder.
- Align the index mark with the "TL" mark for the left cylinder.



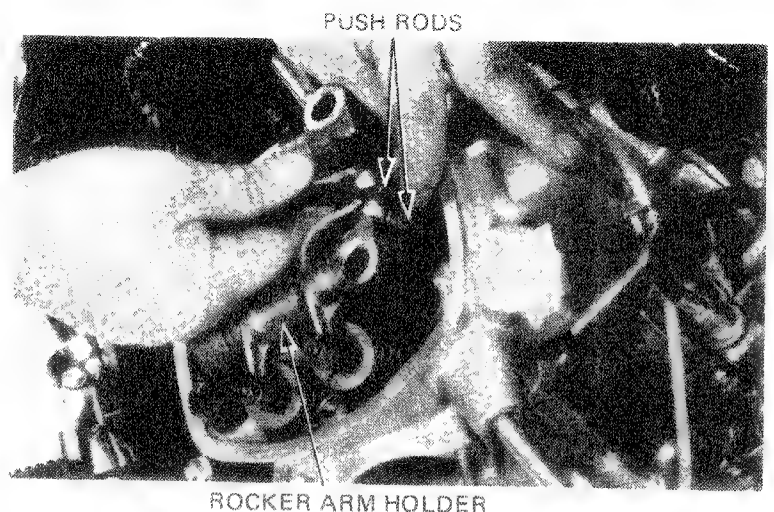
Install each cylinder head.  
Install the cylinder head dowel pins.  
Install the push rods into the rocker arm retainers.

**NOTE**

Apply MULTIPURPOSE NLGI No. 2 (MoS<sub>2</sub> additive) GREASE to the end of each push rod.



Install the rocker arm holder assembly.  
Align the rocker arms with the push rods.



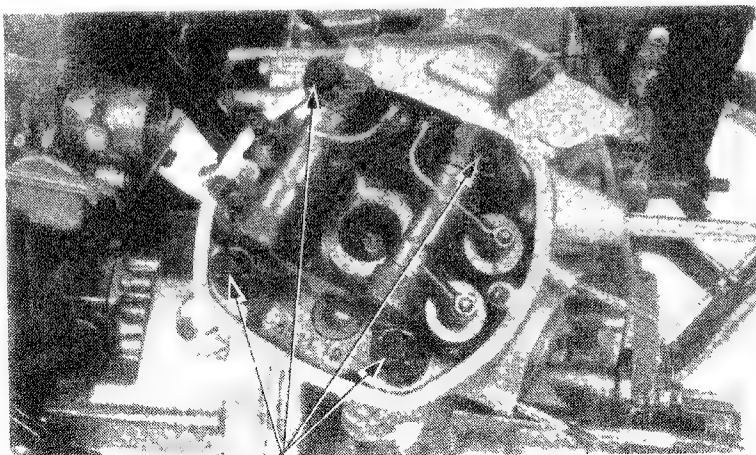


## CYLINDER HEAD/VALVE

Tighten the cylinder head bolts in 2-3 steps in a crisscross pattern.

**TORQUE:** 50-60 N·m  
(5.0-6.0 kg-m, 36-43 ft-lb)

Check the valve clearance (Page 3-7) and adjust if necessary.



CYLINDER HEAD BOLTS

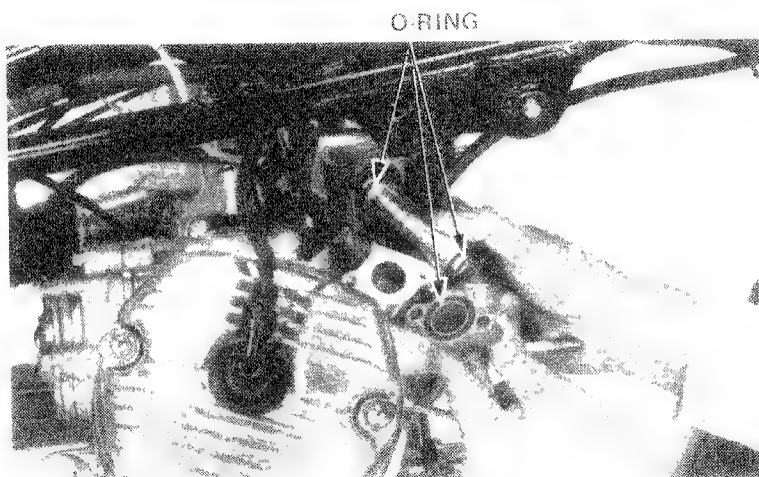
Install the cylinder head cover and connect the spark plug caps.

Install the air spoiler and thermostat unit (Page 9-8).

Install the water pipes and pipe joints.

### NOTE

Make sure that the O-rings are not deteriorated or damaged.



O-RING

Install the valve for intake pipe and exhaust pipe.  
Install the front engine hanger.

### TORQUE:

10 mm bolt: 45-70 N·m  
(4.5-7.0 kg-m, 33-51 ft-lb)

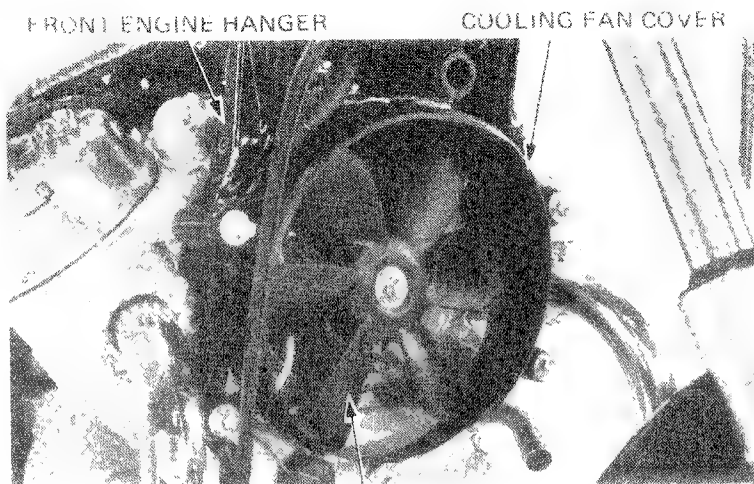
12 mm bolt: 60-80 N·m  
(6.0-8.0 kg-m, 43-58 ft-lb)

Install the cooling fan cover.

**TORQUE:** 30-40 N·m  
(3.0-4.0 kg-m, 22-29 ft-lb)

Install the cooling fan and radiator (Page 10-7).

Fill the cooling system with the recommended coolant (Page 9-3).



FRONT ENGINE HANGER

COOLING FAN COVER

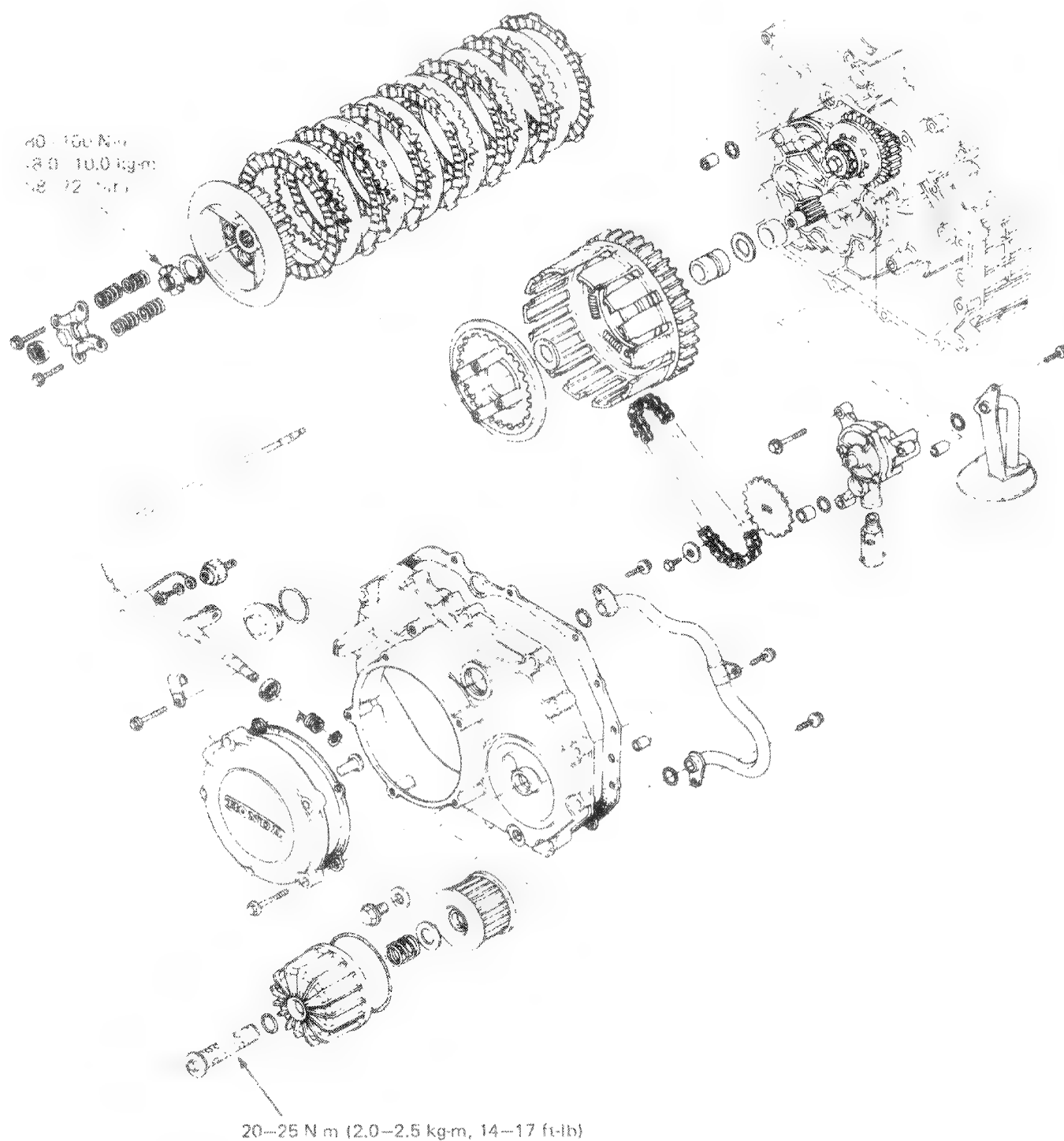
COOLING FAN



**HONDA**  
GL500  
GL500 INTERSTATE

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MEMO





**HONDA**  
GL500  
GL500 INTERSTATE

# 7. CLUTCH/OIL PUMP

|                       |      |
|-----------------------|------|
| SERVICE INFORMATION   | 7-1  |
| TROUBLESHOOTING       | 7-1  |
| CLUTCH REMOVAL        | 7-2  |
| CLUTCH INSTALLATION   | 7-5  |
| OIL PUMP REMOVAL      | 7-9  |
| OIL PUMP INSTALLATION | 7-12 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- Clutch discs, plates "A" and "B", clutch center, and clutch plates can be serviced by removing the clutch cover.
- To service the oil pump, it is necessary to remove the radiator and transmission cover.
- All these operations can be accomplished with the engine in the frame

### TOOLS

#### Special

Clutch center holder : 07923-4150000

#### Common

Lock nut socket wrench 26 x 30 mm : 07716-0020202  
Extension : 07716-0020500 Equivalent tool commercially available in U.S.A

### SPECIFICATIONS

|                                           |                                |                                 | Unit: mm (in)                                        |                                    |
|-------------------------------------------|--------------------------------|---------------------------------|------------------------------------------------------|------------------------------------|
|                                           | Item                           |                                 | Standard                                             | Service Limit                      |
| Clutch                                    | Lever free play (at lever end) |                                 | 10-20 (3/8-3/4)                                      |                                    |
|                                           | Clutch spring                  | Free length                     | 33.90 (1.335)                                        | 32.5 (1.28)                        |
|                                           |                                | Tension                         | 19.7-22.3 kg/23.5 mm (43.4-49.2 lbs/0.93 in)         | 18.0 kg/23.5 mm (39.7 lbs/0.93 in) |
|                                           | Disc thickness                 | A                               | 2.7 (0.11)                                           | 2.3 (0.091)                        |
|                                           |                                | B                               | 3.5 (0.14)                                           | 3.1 (0.122)                        |
|                                           | Plate warpage                  | A                               |                                                      | 0.20 (0.008)                       |
|                                           |                                | B                               |                                                      | 0.20 (0.008)                       |
|                                           | Clutch outer O.D.              |                                 | 32.000-32.025 (1.2598-1.2608)                        | 32.07 (1.263)                      |
|                                           | Outer guide O.D.               |                                 | 31.959-31.975 (1.2582-1.2589)                        | 31.90 (1.256)                      |
|                                           | Oil pump                       | Inner: to-outer rotor clearance |                                                      |                                    |
| Outer rotor to-body clearance             |                                |                                 |                                                      | 0.35 (0.014)                       |
| Rotor-to-body clearance                   |                                |                                 |                                                      | 0.10 (0.004)                       |
| Oil pressure relief valve relief pressure |                                |                                 | 500-600 kPa (5.0-6.0 kg/cm <sup>2</sup> , 71-85 psi) |                                    |

## TROUBLESHOOTING

### Oil Pump

- Refer to page 2-1 for oil pump troubleshooting.

### Clutch

- Faulty clutch operation can usually be corrected by adjusting the free play.

### Clutch Slips When Accelerating

- No free play
- Discs worn
- Springs weak

### Clutch Will Not Disengage

- Too much free play
- Plates warped

### Clutch Chatters or Rattles

- Worn clutch outer and disc splines

### Motorcycle Creeps with Clutch Disengaged

- Too much free play
- Plates warped

### Excessive Lever Pressure

- Clutch cable kinked, damaged or dirty
- Lifter mechanism damaged

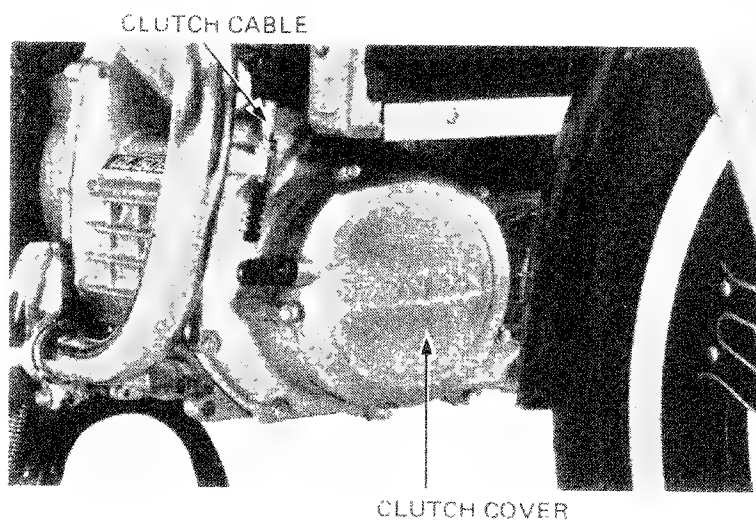
### Clutch Operation Feels Rough

- Outer drum slots rough
- Disc plate wave spring weak or damaged



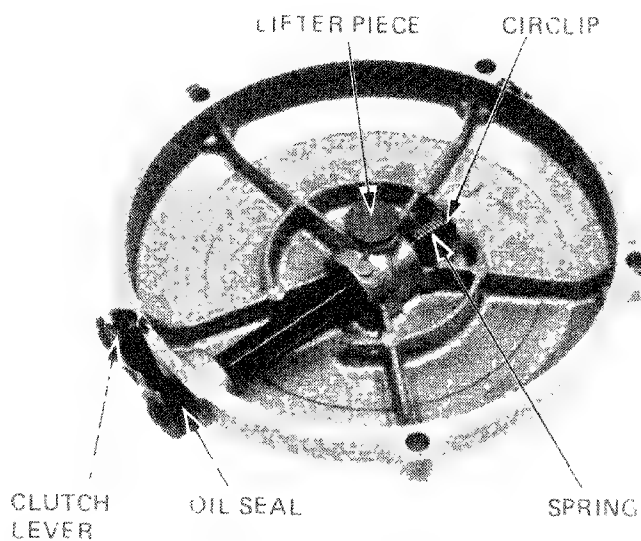
## CLUTCH REMOVAL

1. Turn the engine off.
2. Disconnect the clutch cable at the lower adjuster.
3. Remove the clutch cable.



## CLUTCH LIFTER REMOVAL

1. Remove the lifter piece, circlip, spring, clutch lever and oil seal.

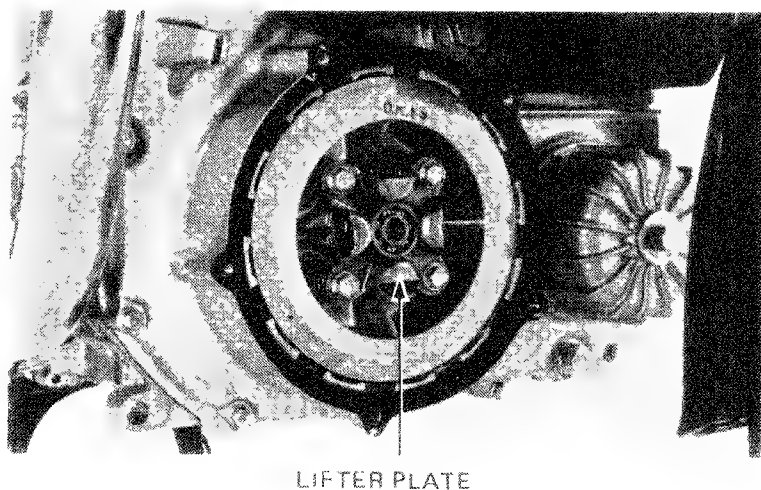


## CLUTCH LIFTER PLATE REMOVAL

1. Remove the bolts, springs and lifter plate.

### NOTE

Loosen the bolts in an crisscross pattern in 2 or more steps.







## CLUTCH REMOVAL

Attach the CLUTCH CENTER HOLDER onto the pressure plate boss with four bolts.

### NOTE

Tighten the bolts finger tight.

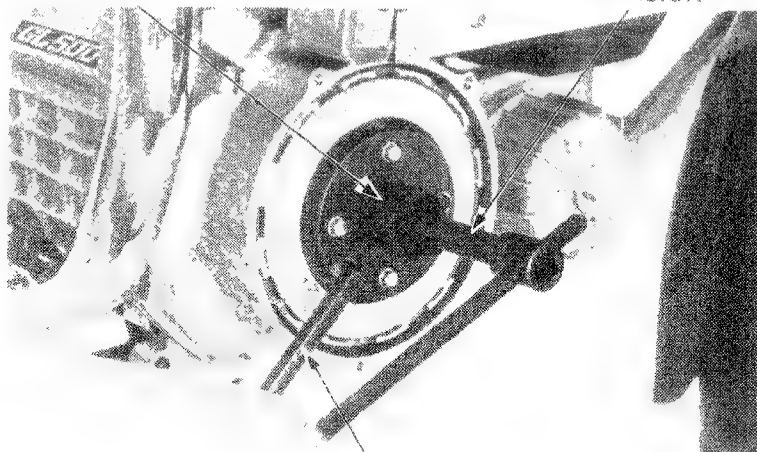
### CAUTION

Damage to the pressure plate will occur if the clutch center holder is not attached with care.

Remove the bolts and the washers.

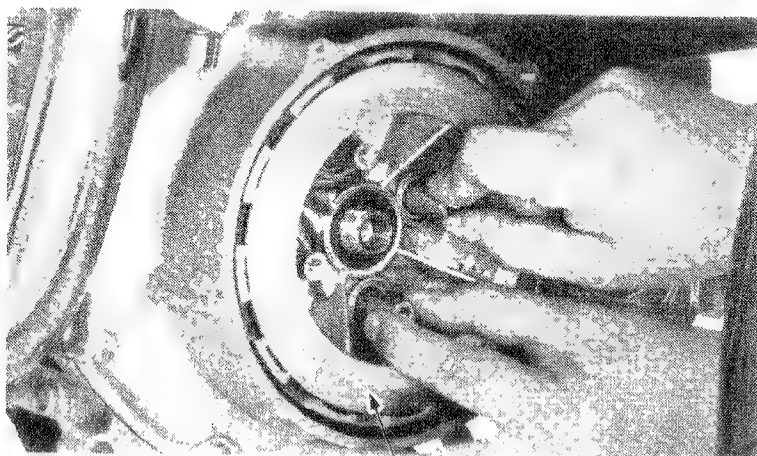
LOCK NUT SOCKET  
WRENCH 26 x 30 mm

EXTENSION



CLUTCH CENTER HOLDER

Remove the pressure plate, discs "A" and "B", disc plate, and clutch center as a unit.

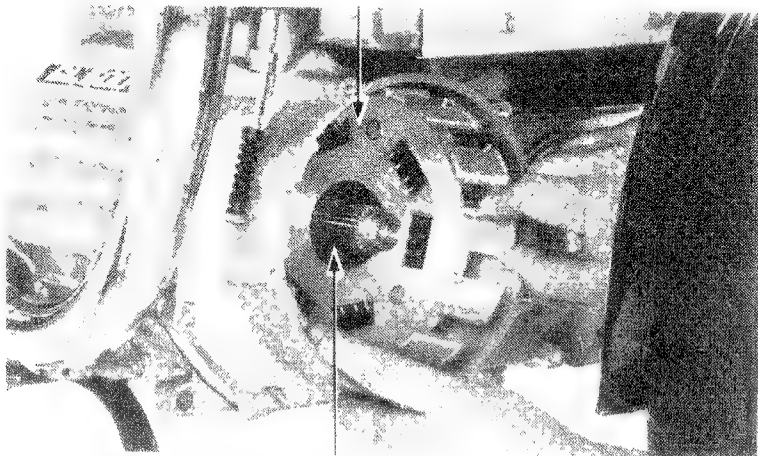


CLUTCH CENTER

Remove the thrust washer and clutch outer.

Remove the clutch outer guide, thrust washer and outer.

CLUTCH OUTER



THRUST WASHER



### CLUTCH DISC INSPECTION

Replace the clutch discs if they show signs of scoring or discoloration.

Measure the disc thickness.

#### SERVICE LIMITS:

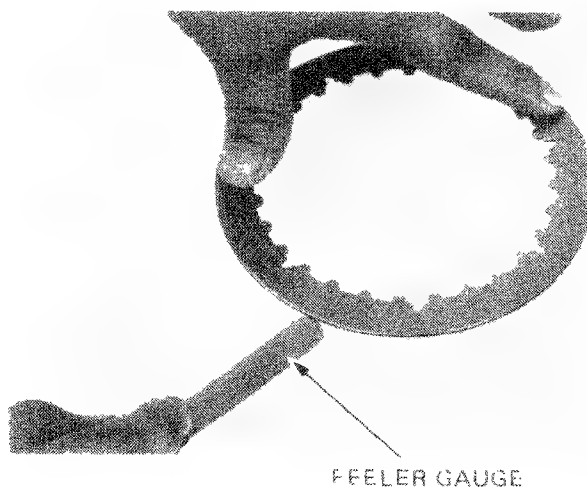
Disc A: 2.30 mm (0.091 in)

Disc B: 3.10 mm (0.122 in)



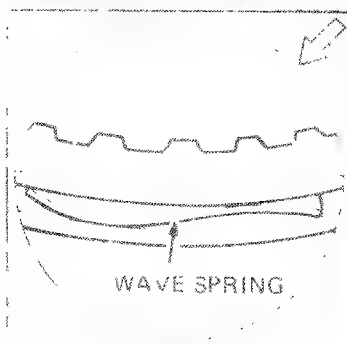
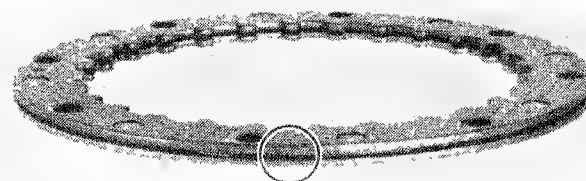
### CLUTCH PLATE INSPECTION

Check for plate warpage on a surface plate, using a feeler gauge.



### CLUTCH PLATE B INSPECTION

Check the wave spring for damage.





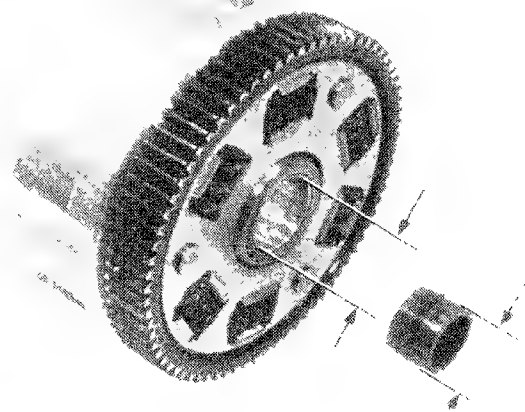
### CLUTCH OUTER AND OUTER GUIDE INSPECTION

Check the slot in the outer drum for nicks, cuts or deterioration made by the friction discs.

Measure the I.D. of the clutch outer and the O.D. of the outer guide.

#### SERVICE LIMITS:

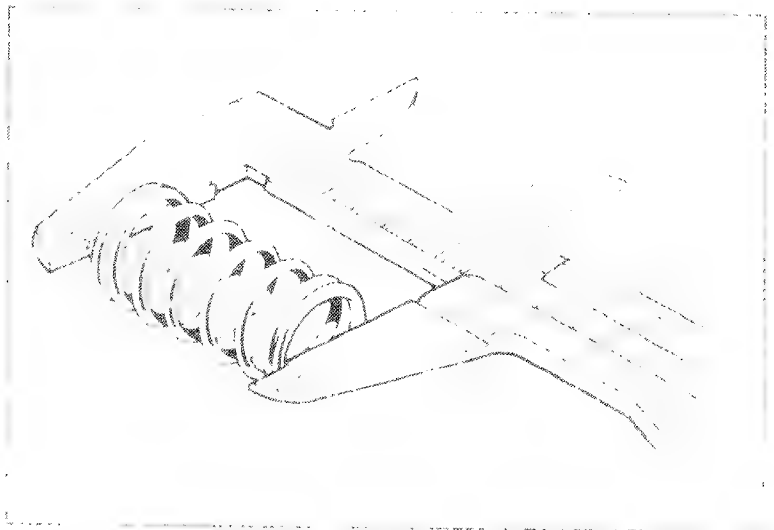
|       |                           |
|-------|---------------------------|
| Outer | I.D.: 32.07 mm (1.263 in) |
| Guide | O.D.: 31.90 mm (1.256 in) |



### CLUTCH SPRING INSPECTION

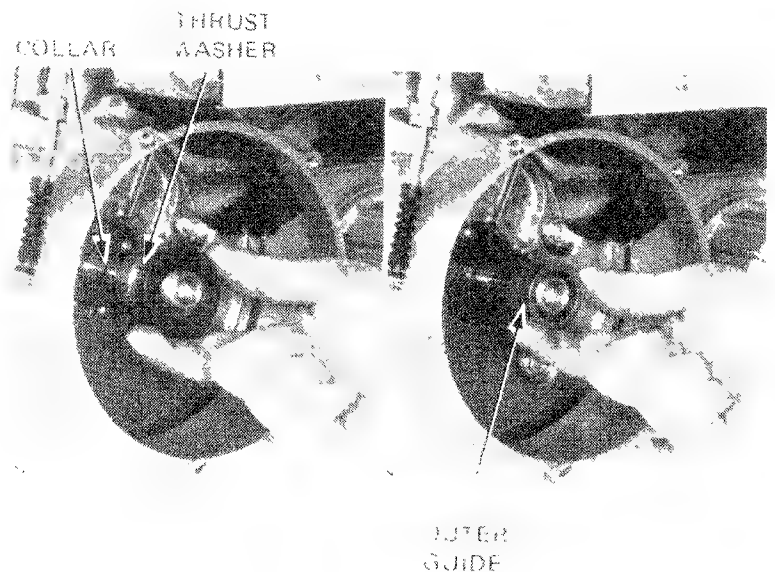
Measure the spring free length.

SERVICE LIMIT: 32.5 mm (1.28 in)



### CLUTCH INSTALLATION

Install the collar, thrust washer and outer guide to the transmission mainshaft.

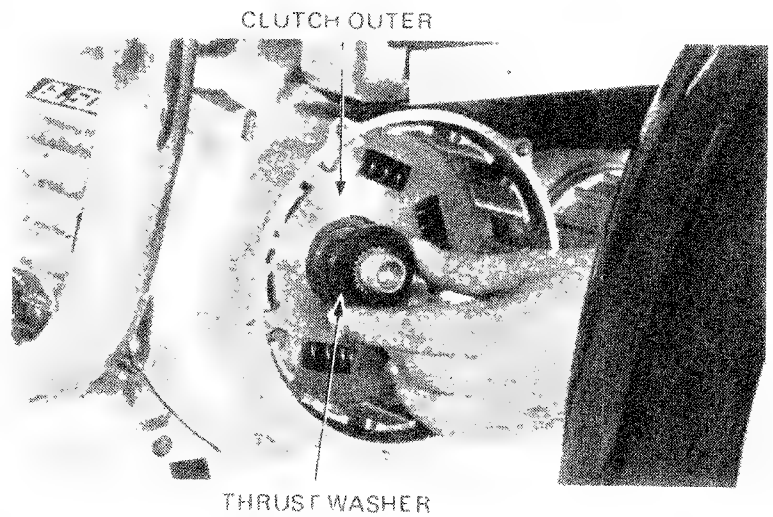


## CLUTCH OIL PUMP



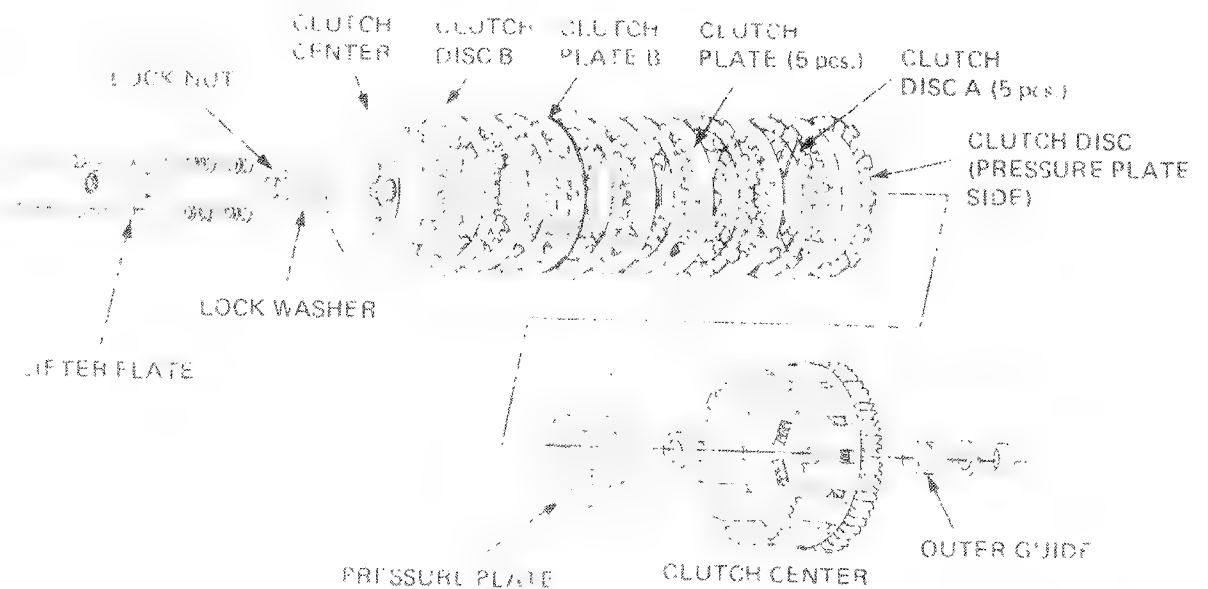
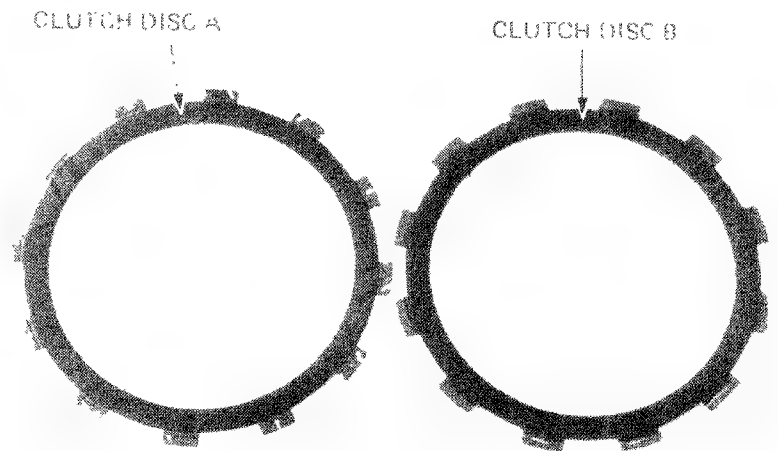
**HONDA**  
GL500  
GL500 INTERSTATE

- 1. Clutch Oil Pump
- 2. Thrust Washer



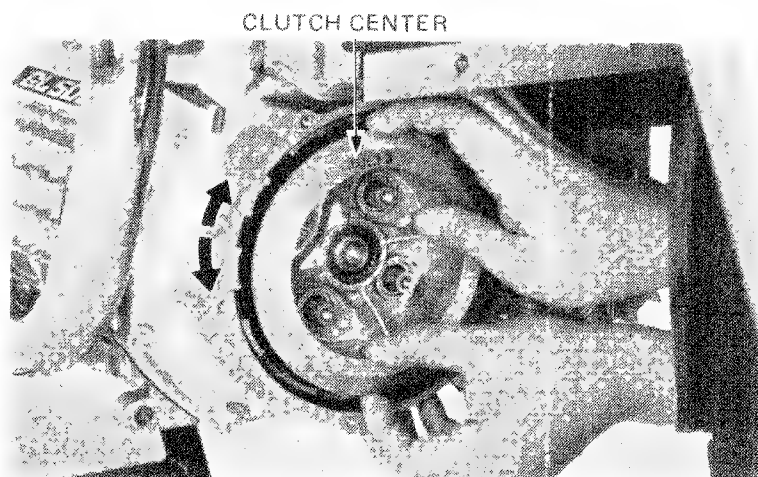
- 3. Clutch Disc A (Pressure Plate Side)
- 4. Clutch Disc B (Pressure Plate Side)

- 5. Clutch Disc A (Pressure Plate Side)
- 6. Clutch Disc B (Pressure Plate Side)
- 7. Clutch Disc A (Pressure Plate Side)
- 8. Clutch Disc B (Pressure Plate Side)





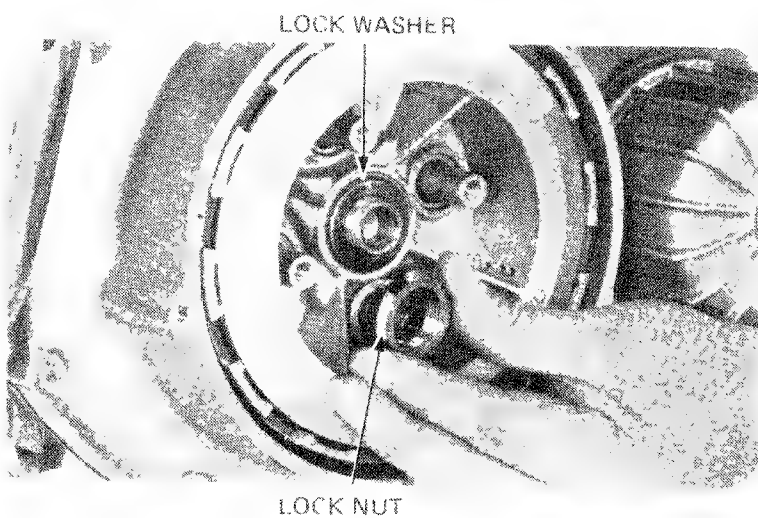
Install the clutch center, aligning the splines by rotating the clutch center.



Install the clutch on the mainshaft.  
Install the lock washer and lock nut.

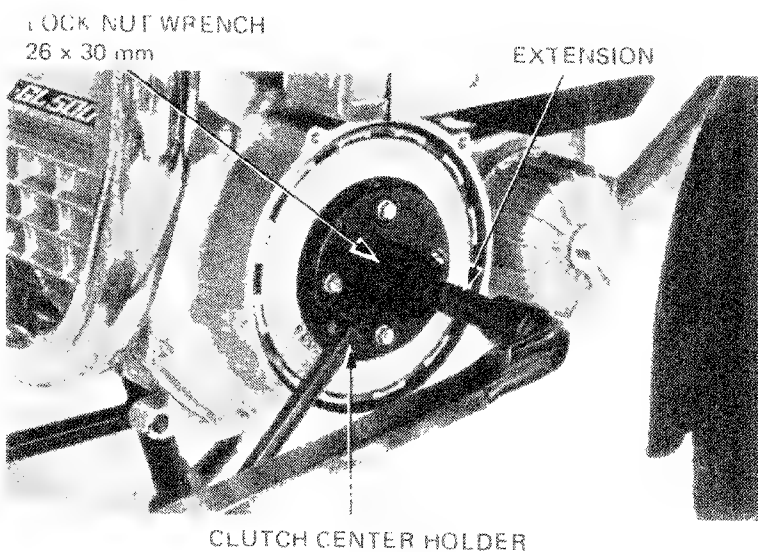
**NOTE**

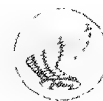
- Install the lock washer with the mark "OUT SIDE" facing out.
- Install the lock nut with the flat end facing out.



Attach the CLUTCH CENTER HOLDER to the pressure plate boss to prevent it from turning.  
Tighten the lock nut.

**TORQUE:** 80–100 N·m  
(8.0–10.0 kg·m, 58–72 ft·lb)





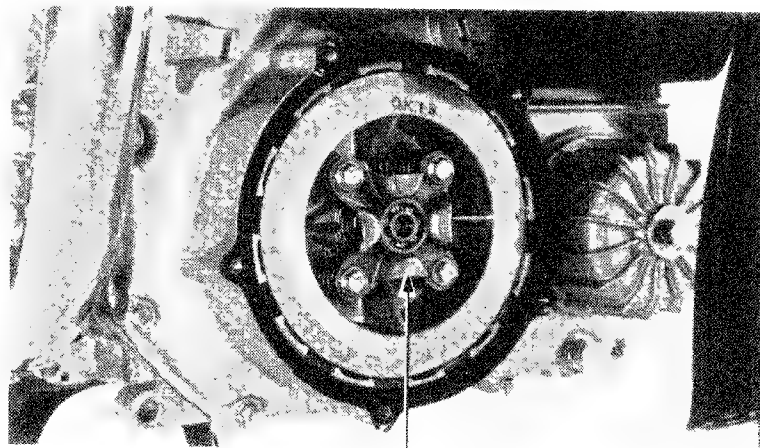
## CLUTCH/OIL PUMP

Install the clutch springs and lifter plate bolts.

### NOTE

Tighten the bolts evenly 2-3 steps using a crisscross pattern.

Install the clutch cover gasket.



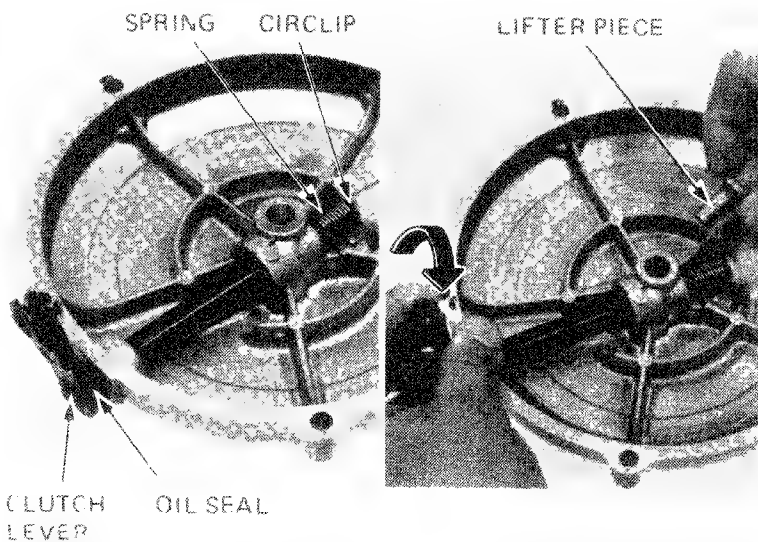
LIFTER PLATE

Install the O ring in the clutch cover.

Install the clutch lever.

Install the spring and circlip.

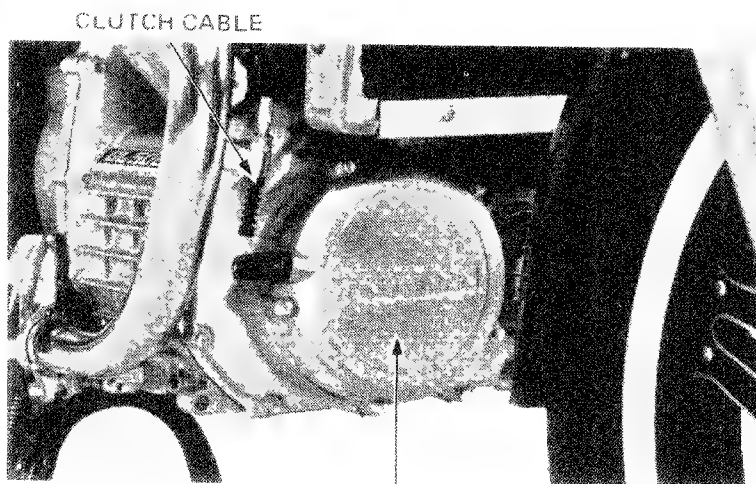
Rotate the clutch lever to align the hole in the lever with the hole in the clutch cover and insert the lifter piece.



Install the clutch cover.

Connect the clutch cable.

Adjust the clutch (Page 3-14).



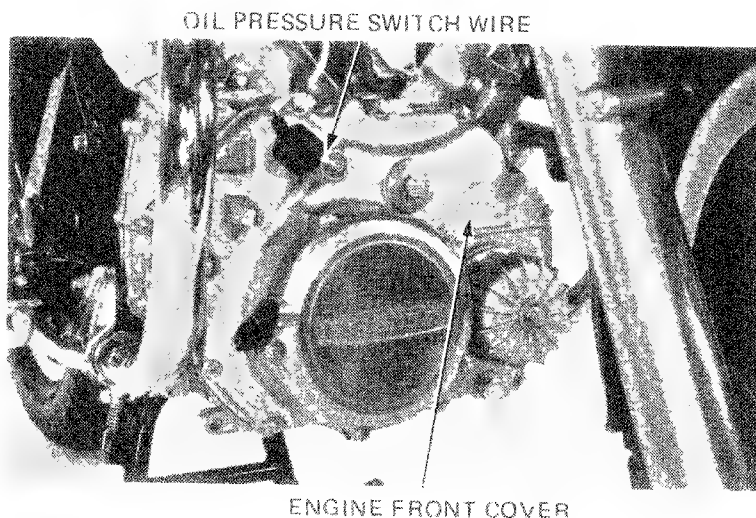
CLUTCH COVER



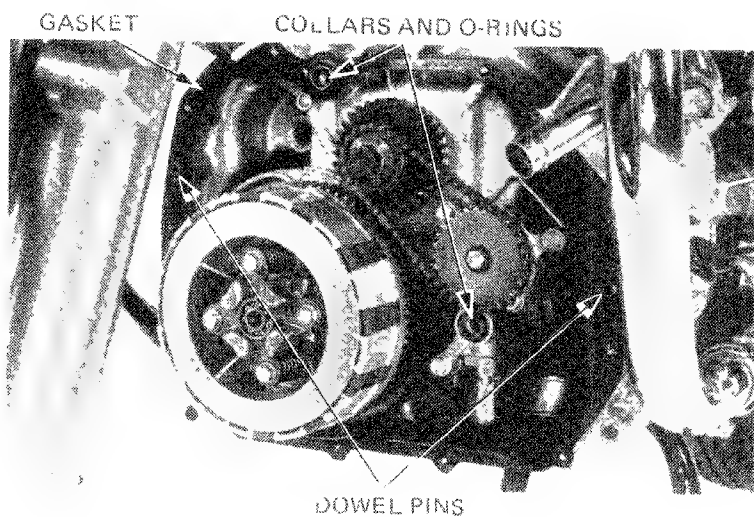


## OIL PUMP REMOVAL

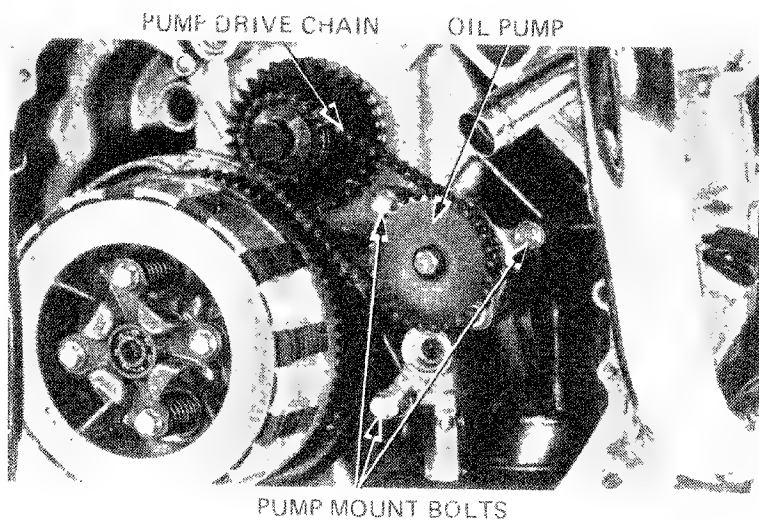
Remove the radiator (Page 9 -5).  
Remove the cooling fan and fan cover (Page 9 -6).  
Remove the right front engine hanger (Page 6 -3).  
Drain the oil from the engine.  
Disconnect the clutch cable at the lower end.  
Disconnect the oil pressure switch wire.  
Remove the engine front cover.



Remove the lower pins collars, O-rings and gasket.



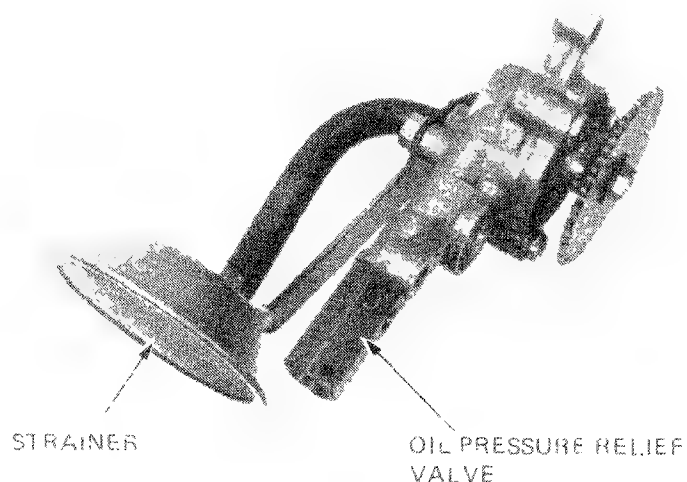
Remove the three oil pump mount bolts and remove the oil pump with pump drive chain.





### CLUTCH/OIL PUMP DISASSEMBLY

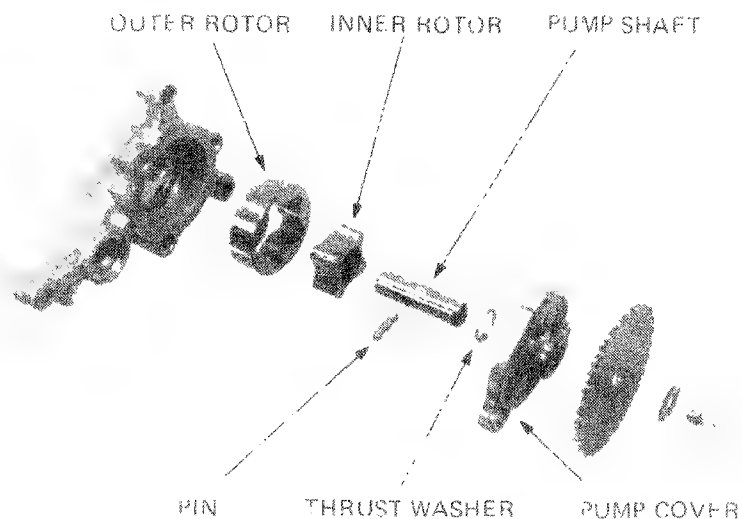
Remove the pressure relief valve and oil strainer.  
Inspect the strainer and clean with solvent.



Remove the sprockets.

Remove the pump cover, thrust washer, pump shaft, and driving pin.

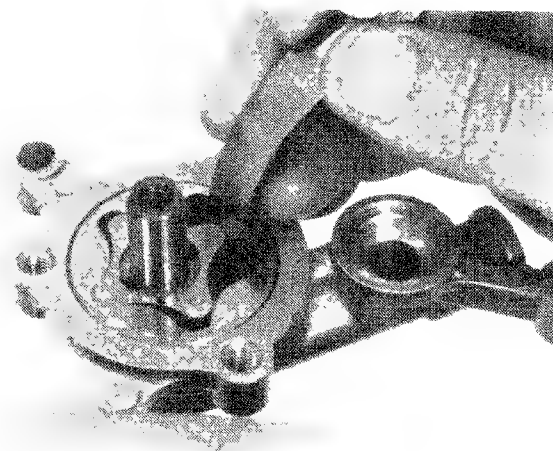
Remove the inner and outer rotors.



### CLUTCH/OIL PUMP INSPECTION

Measure pump tip clearance.

SERVICE LIMIT: 0.10 mm (0.004 in)





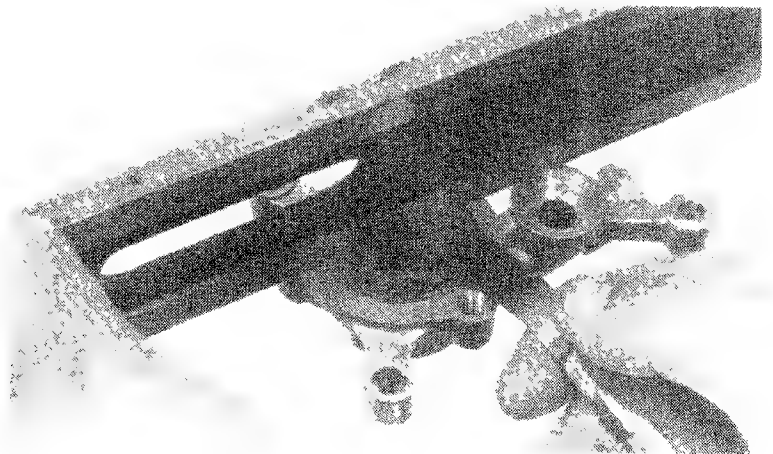
Measure the pump body clearance.

SERVICE LIMIT: 0.35 mm (0.014 in.)



Measure the oil pump end clearance with a straight edge and feeler gauge.

SERVICE LIMIT: 0.10 mm (0.004 in.)



### RELIEF VALVE INSPECTION

Remove the valve as an assembly and check its operation.

If the valve does not operate properly, disassemble and check for a stuck valve or weak spring.

Replace the relief valve as a unit if the spring or valve is damaged.

SPRING PIN    SPRING SLAT    SPRING



VALVE PLUNGER



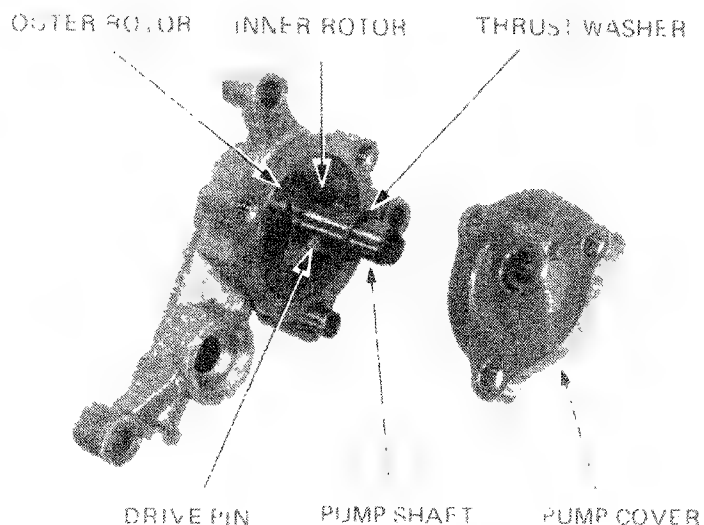
### OIL PUMP ASSEMBLY

Insert the outer and inner rotors into the pump body.

Slide the drive pin into the pump shaft, and install the shaft.

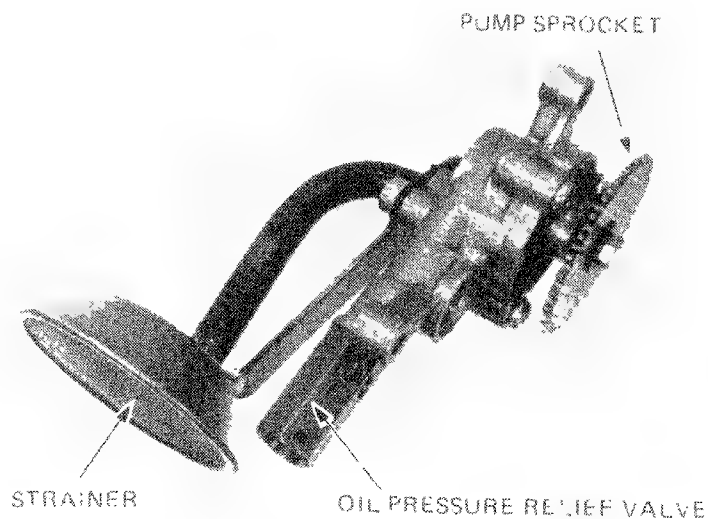
Install the thrust washer and drive pin.

Install the pump cover.



Install the oil strainer.

Install the oil pressure relief valve and pump sprocket. Do not tighten at this time.

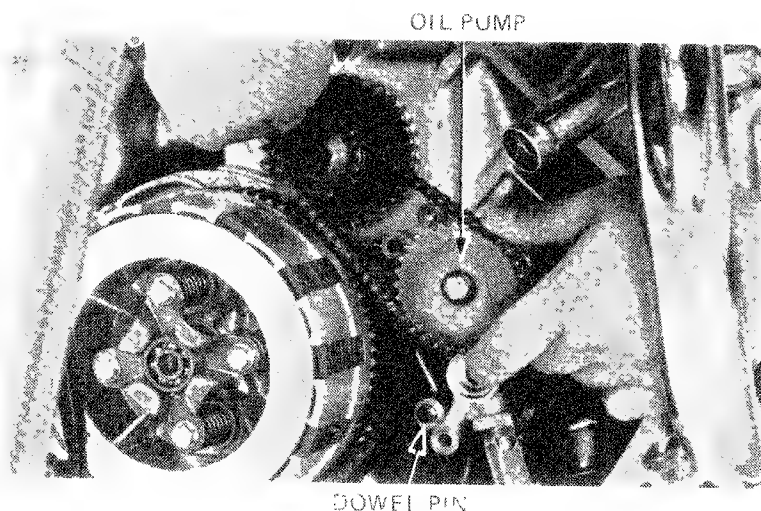


### OIL PUMP INSTALLATION

Install the drive pin.

Install the mounting bolt at this time.

Slide the drive pin over the pump and drive shaft.



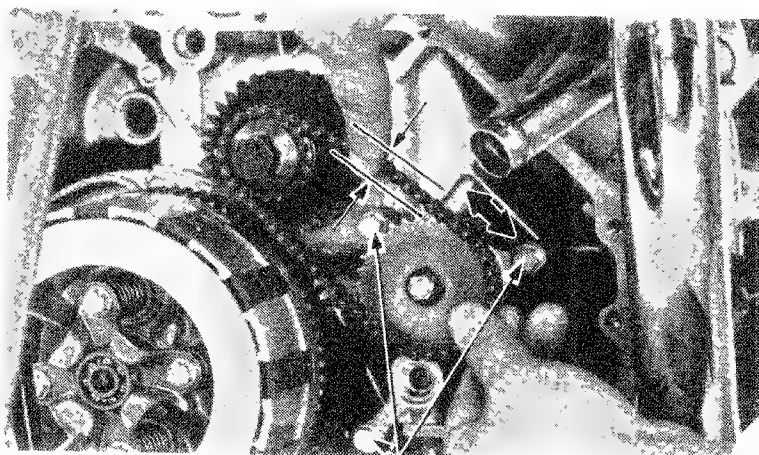


Tighten the pump sprocket bolt and relief valve.  
Adjust the chain free play by rotating the pump  
right or left, then torque the pump bolts.

**FREE PLAY** 2.0–3.5 mm (0.08–0.14 in)

Tighten the three pump bolts

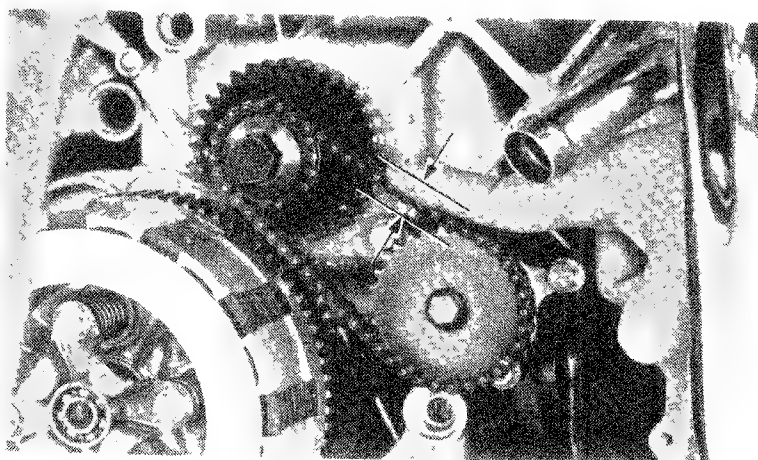
**TORQUE** 8–12 N·m (0.8–1.2 kg·m 6–9 ft·lb)



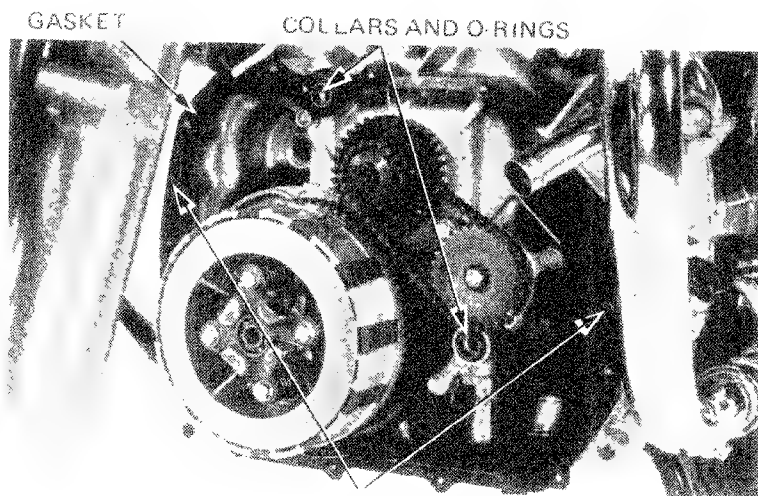
PUMP BOLTS

Retrack the oil pump drive chain free play

**FREE PLAY** 2.0–3.5 mm (0.08–0.14 in)



Install the drive pins, collars, O-rings and gasket.



GASKET

COLLARS AND O-RINGS

DOWEL PINS



## CLUTCH OIL PUMP

1. Connect the engine oil pump  
to the clutch oil pressure switch wire.

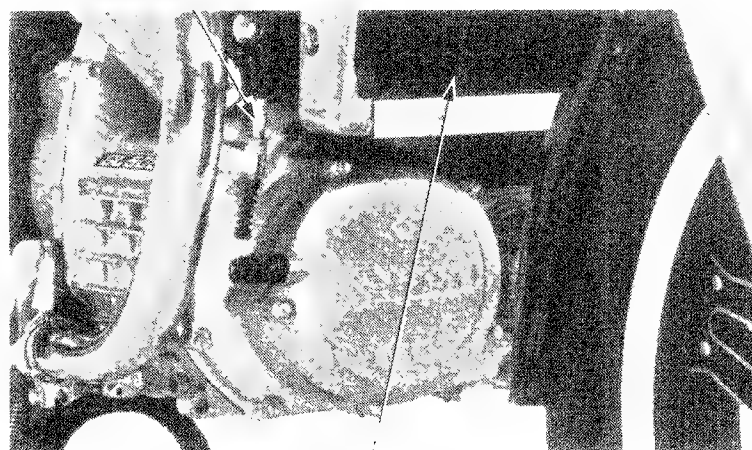
CLUTCH OIL PRESSURE SWITCH WIRE



ENGINE FRONT COVER

2. Connect the clutch cable.  
Adjust the clutch free play (Page 3-14).  
Install the right engine hanger (Page 6-16).  
Install the cooling fan cover and cooling fan (Page 2-3).  
Bleed the radiator and fill to the proper level with  
oil (Page 9-10).  
Add the specified amount of engine oil (Section 2).

CLUTCH CABLE



RADIATOR



**HONDA**  
GL500  
GL500 INTERSTATE

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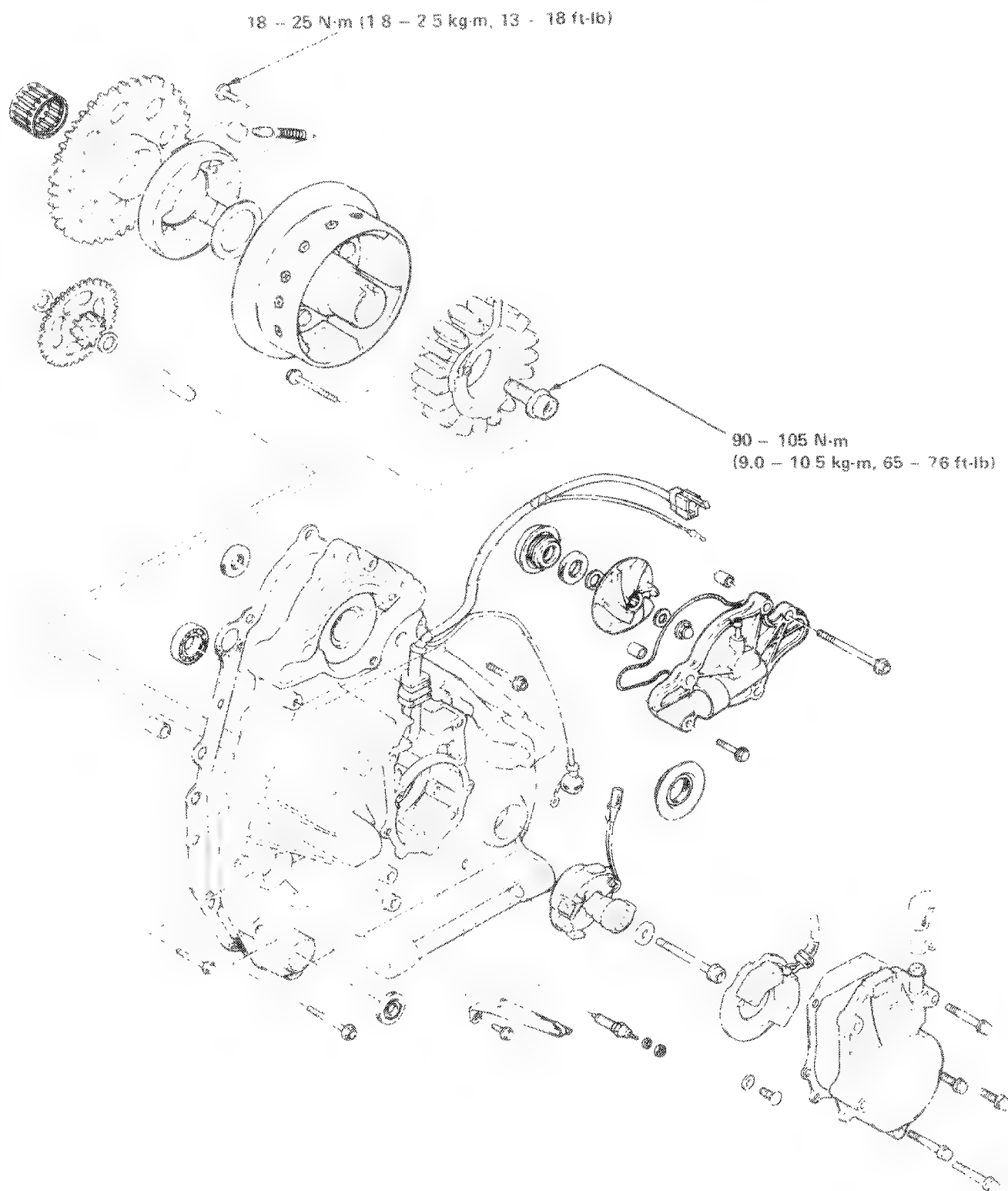
## MEMO



AC GENERATOR/FLYWHEEL/  
REAR COVER



**HONDA**  
GL500  
GL500 INTERSTATE





**HONDA**  
GL500  
GL500 INTERSTATE

# 8. AC GENERATOR/FLYWHEEL/ REAR COVER

|                                 |     |                                      |     |
|---------------------------------|-----|--------------------------------------|-----|
| SERVICE INFORMATION             | 8-1 | STARTER CLUTCH OUTER<br>INSTALLATION | 8-7 |
| ENGINE REAR COVER<br>REMOVAL    | 8-2 | FLYWHEEL INSTALLATION                | 8-8 |
| FLYWHEEL REMOVAL                | 8-4 | ENGINE REAR COVER<br>INSTALLATION    | 8-9 |
| STARTER CLUTCH OUTER<br>REMOVAL | 8-6 |                                      |     |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- To inspect and adjust the pulse generator, see Section 17 IGNITION SYSTEM.
- Be sure to adjust the ignition timing whenever the rear engine cover is removed.
- The pulse generator, starter motor and water pump impeller can be serviced with the engine installed in the frame.
- Take care not to cut the AC generator and stator wires and wire harnesses when removing or installing parts.
- For AC generator inspection, see Section 16 BATTERY CHARGING SYSTEM.

### TOOLS

#### Special

|                       |                                                                 |
|-----------------------|-----------------------------------------------------------------|
| Cear holder           | 07924-4150000                                                   |
| Forx driver bit (T40) | 07703-0010100 Equivalent tools commercially available in U.S.A. |

#### Common

|                 |                                                                 |
|-----------------|-----------------------------------------------------------------|
| Extension       | 07716-0020500 Equivalent tools commercially available in U.S.A. |
| Flywheel puller | 07733-0020001 or 07933-3950000                                  |
| Driver          | 07749-0010000                                                   |
| Attachment      | 07945-3330300                                                   |
| W/for 22 mm     | 07746-0041000                                                   |

### TORQUE VALUES

|                          |                                               |
|--------------------------|-----------------------------------------------|
| AC generator rotor bolt  | 90 - 105 N·m (9.0 - 10.5 kg·m, 65 - 76 ft·lb) |
| Starter clutch torx bolt | 18 - 25 N·m (1.8 - 2.5 kg·m, 13 - 18 ft·lb)   |

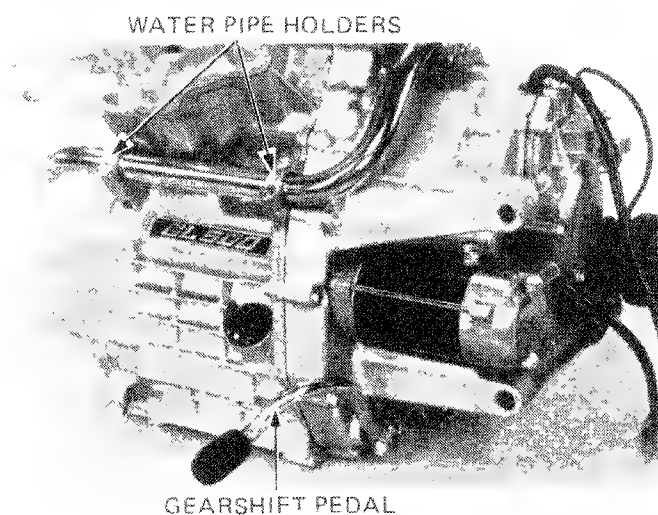


## ENGINE REAR COVER REMOVAL

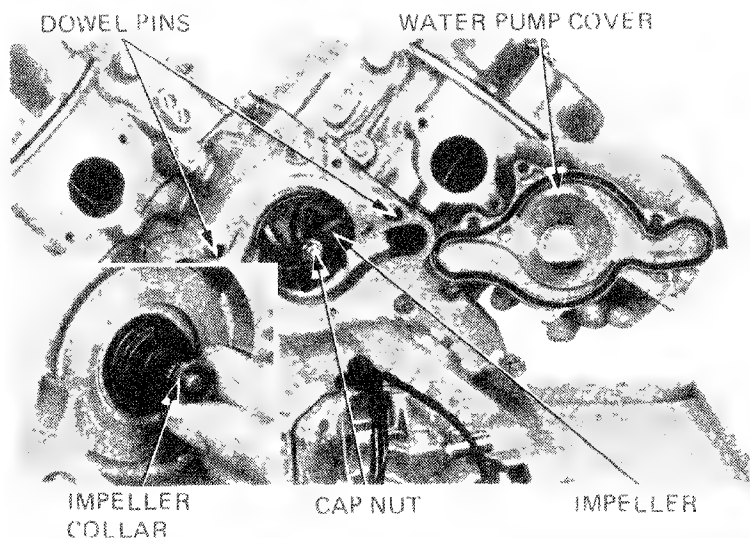
- 1. Disconnect the battery.
- 2. Remove the engine from the frame (Section 5).

### WATER PUMP REMOVAL

- 1. Remove the gearshift pedal.
- 2. Remove the water pipe holders.
- 3. Remove the water pipe.

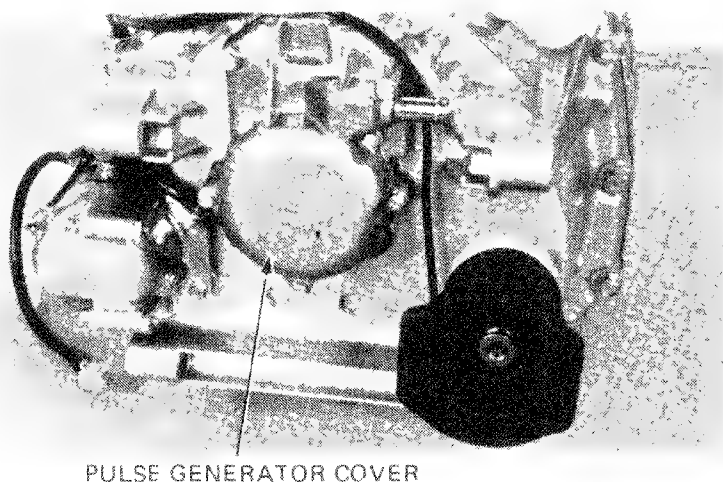


- 1. Remove the water pump cover.
- 2. Remove the dowel pins.
- 3. Remove the cap nut, copper washer and impeller.
- 4. Remove the impeller collar.



### PULSE GENERATOR REMOVAL

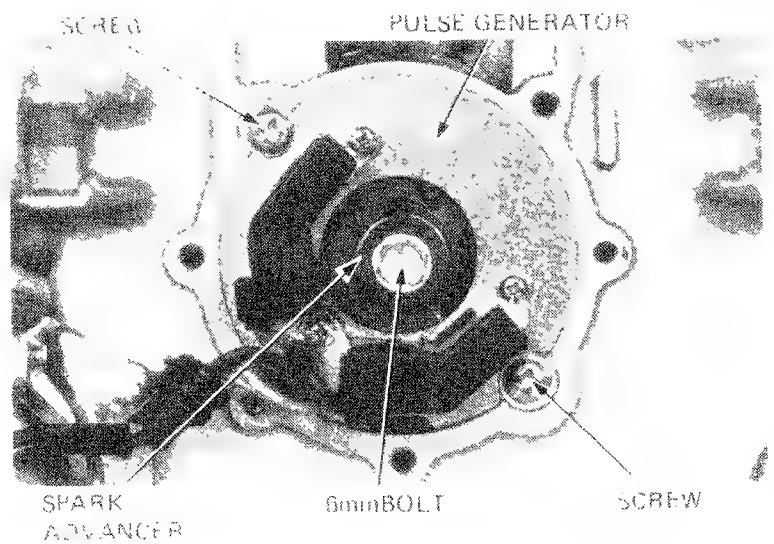
- 1. Remove the pulse generator cover.





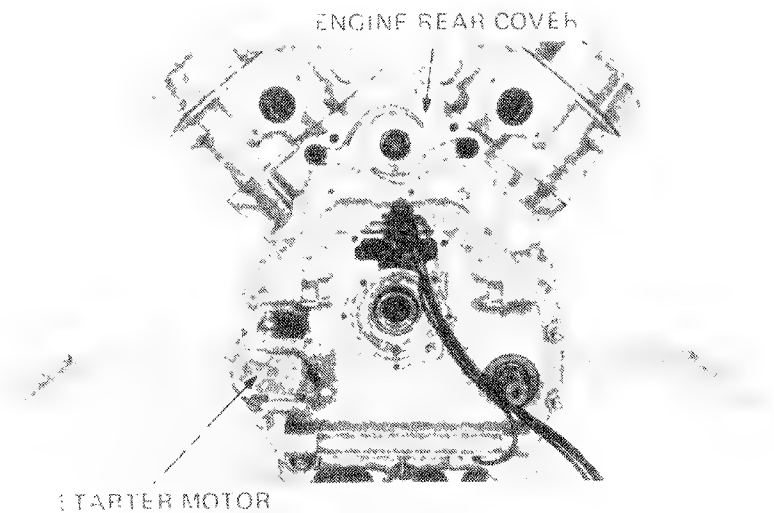
Remove the pulse generator by removing the two screws.

Remove the 6mm bolt and spark advancer from the back of it.

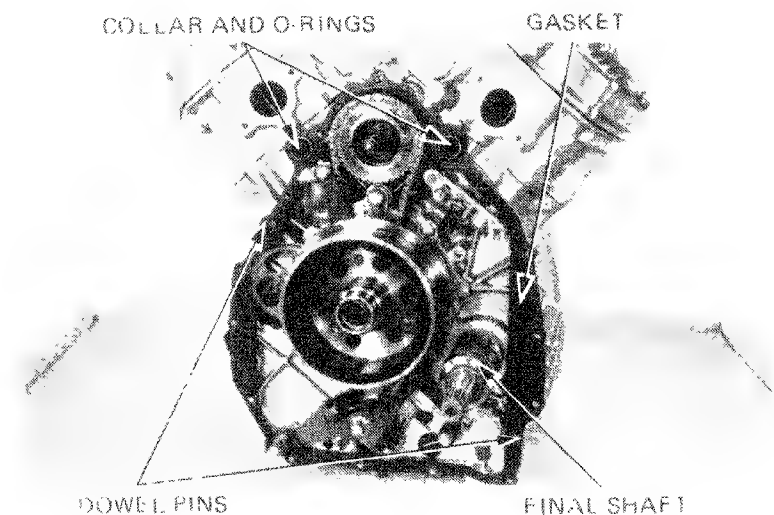


#### ENGINE REAR COVER REMOVAL/DIS- ASSEMBLY

Remove the starter motor.  
Remove the rear cover.



Remove the collars, O-rings, dowel pins, and gasket.  
Remove the final shaft.

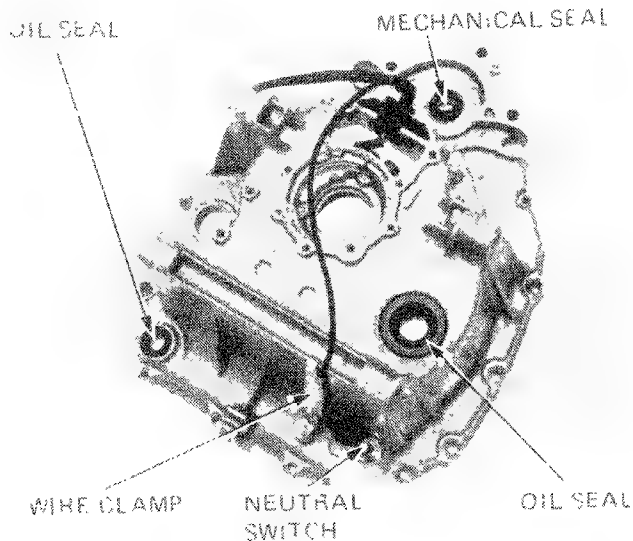


## AC GENERATOR/FLYWHEEL/ REAR COVER



**HONDA**  
GL500  
GL500 INTERSTATE

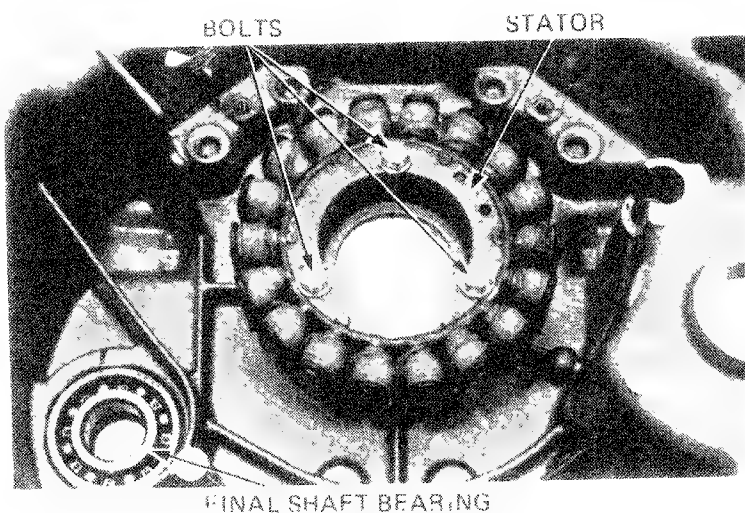
Remove the water pump mechanical seal. (Page 9-7)  
Remove the final shaft and shift spindle oil seals.  
Remove the neutral wire clamp and disconnect it from the neutral switch.  
Remove the neutral switch and sealing washer.



Remove the AC generator stator and the final shaft seal ring.

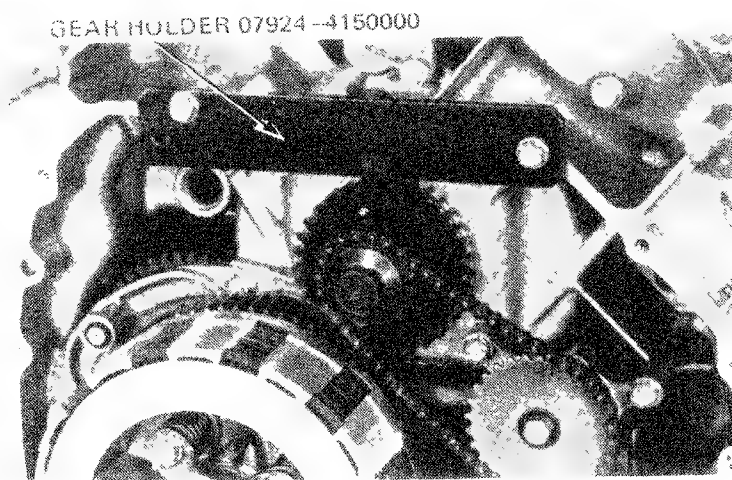
### NOTE

Do not damage the stator coil.  
Refer to page 19-2, for neutral switch inspection.



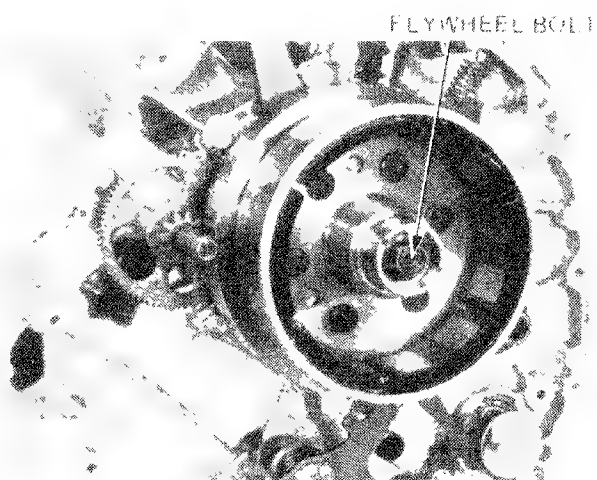
## FLYWHEEL REMOVAL

Remove the front engine cover. (Page 7-9).  
Attach the GEAR HOLDER to the primary drive gear.

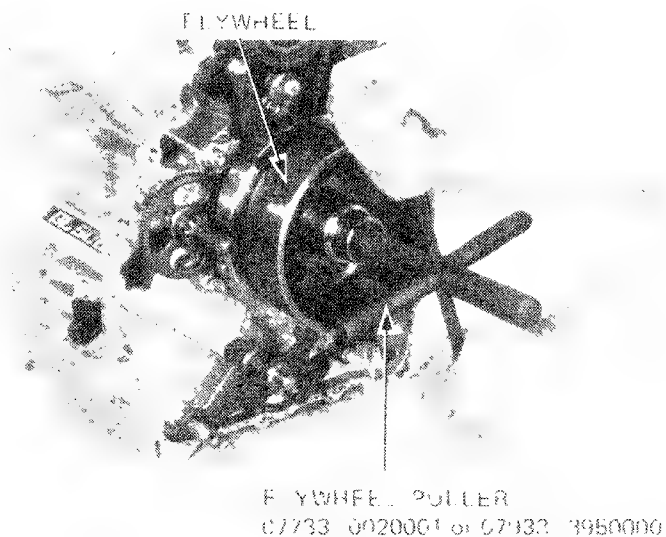




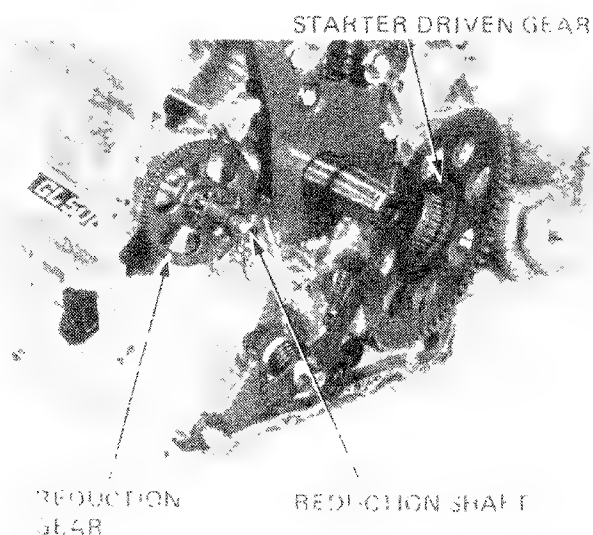
Remove the flywheel bolt



Remove the flywheel



Remove the starter driven gear  
Remove the starter reduction shaft and gear





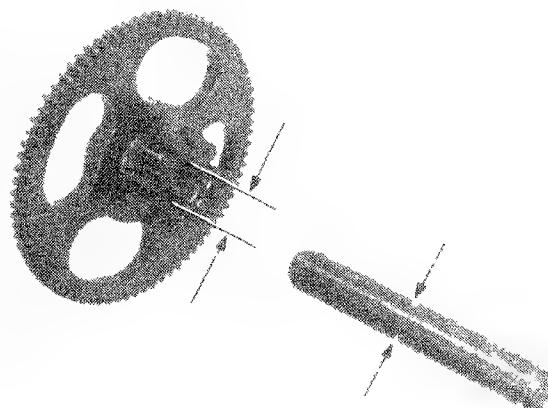
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... for the 'cells' of the image.

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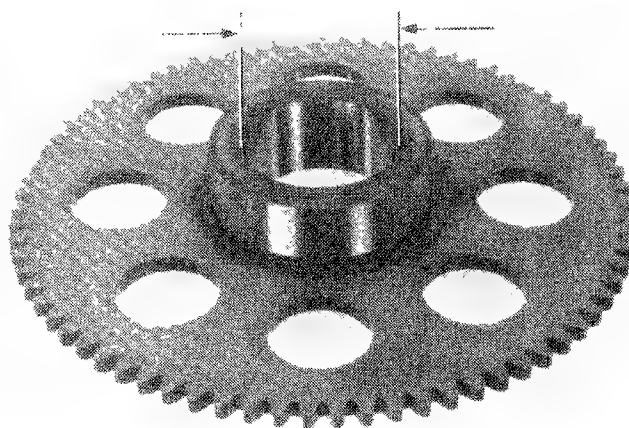
0 20 mm 10 000 ml



INSPECTION

Measure the gear: 10.

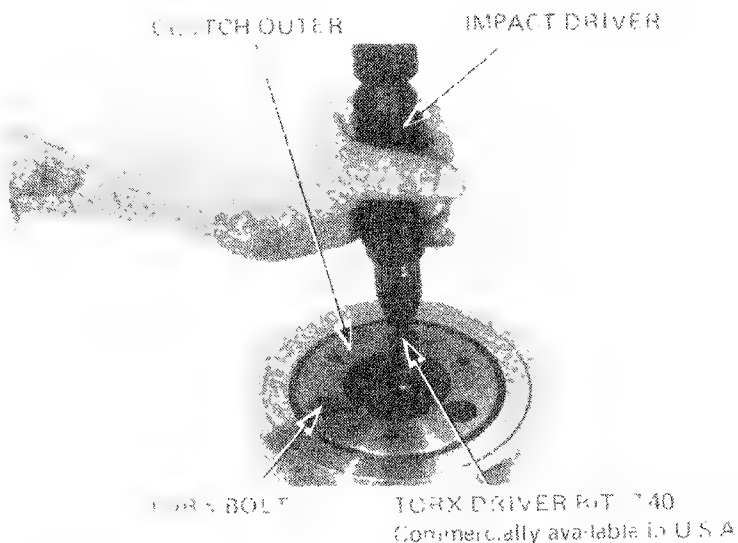
37.10 cm (1.461 ml)



## FAIRER CATCH OUTER REMOVAL

... .. rubber, springs and  
...

1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 26

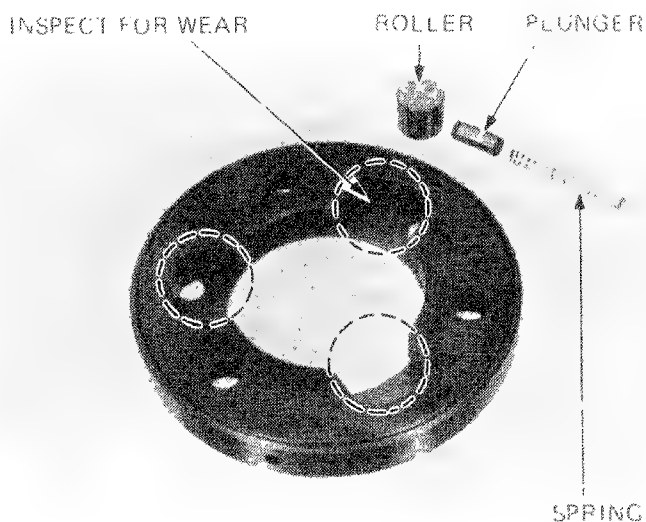






## STARTER CLUTCH OUTER INSPECTION

- Inspect the rollers for freedom of movement in their grooves.
- Inspect each roller and replace it if it is worn or damaged.
- Inspect the clutch outer for damaged or worn roller surfaces.
- Examine the springs and plungers for distortion or excessive wear.



## STARTER CLUTCH OUTER INSTALLATION

- Slide the clutch outer into the flywheel, aligning the holes with the dowel pins in the flywheel.
- Install and torque the TORX bolts.

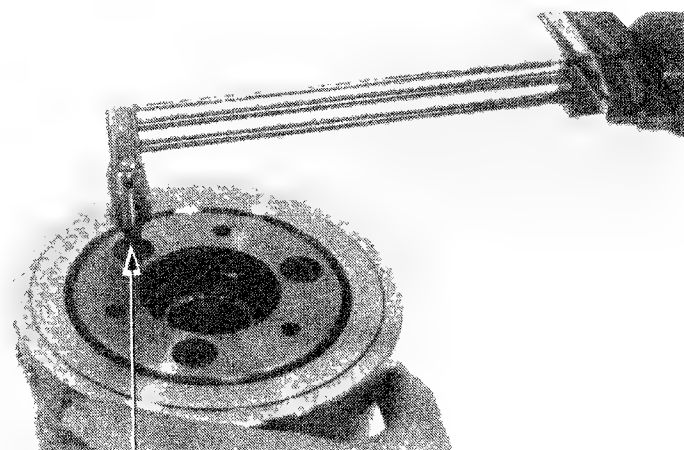
### NOTE:

Replace used TORX bolts.

**TORQUE** 18 – 25 N·m (1.8 – 2.5 kg-m,  
13 – 18 ft-lb)

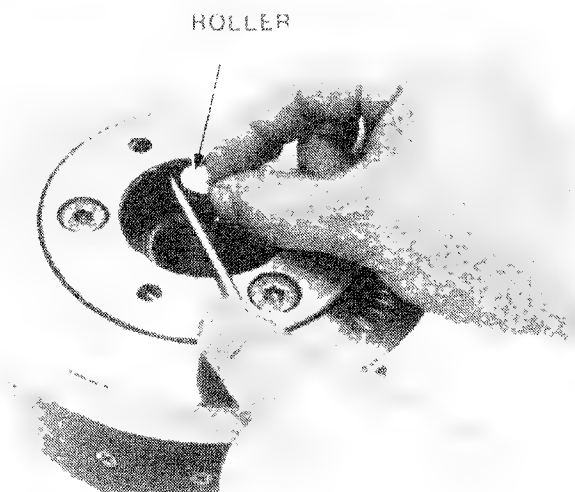
### NOTE:

Coat the threads and undersides of the TORX bolts with a locking agent prior to installation.



Commercially available in U.S.A.

- Slide the spring into the plunger and install in the clutch outer.
- Position the roller into place while holding the plunger with a screwdriver as shown.





Install the reduction shaft thrust washers and reduction gear.

**NOTE**

Use two thrust washers, one on each side of the reduction gear.

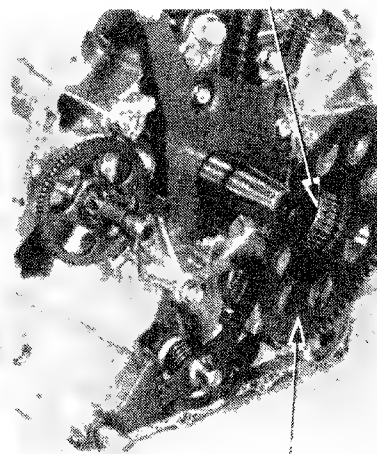
Install the needle roller bearing in the drive gear, install the drive gear onto the crankshaft.

THRUST WASHER



REDUCTION GEAR

NEEDLE ROLLER BEARING



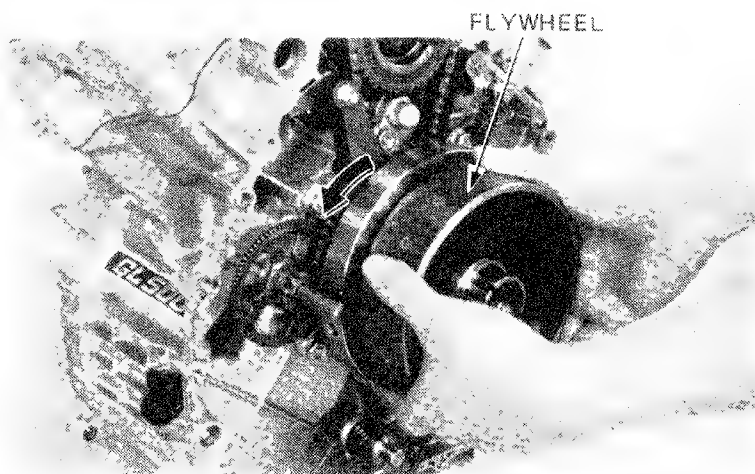
DRIVE GEAR

## FLYWHEEL INSTALLATION

Install the flywheel onto the crankshaft.

**NOTE**

Align the key in the crankshaft with the keyway in the flywheel.  
Rotate the flywheel counterclockwise to its installation.



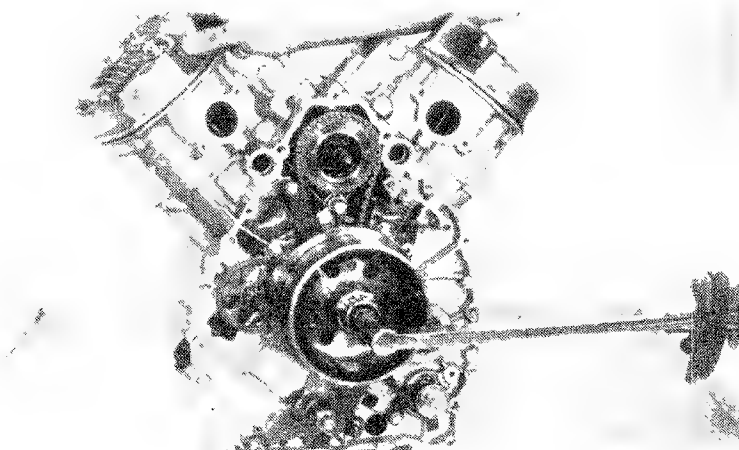
FLYWHEEL

Install and tighten the flywheel bolt.

**TORQUE** 90–105 N·m (9.0–10.5 kg-m,  
65–76 ft-lb)

Remove the GEAR HOLDER from the primary drive belt.

Install the front engine cover.



## ENGINE REAR COVER INSTALLATION

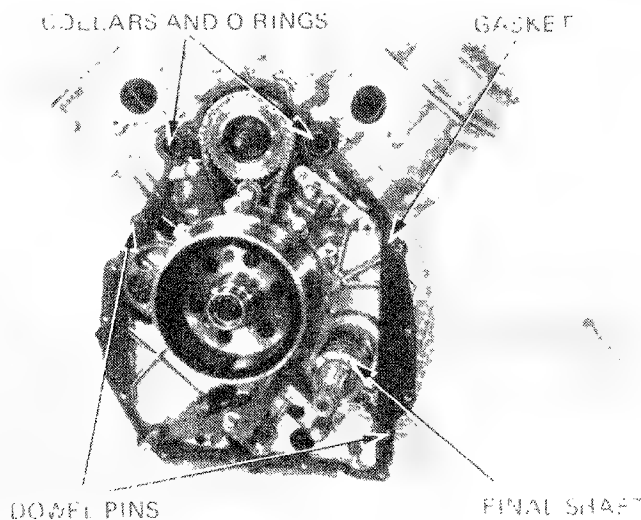
### REAR COVER ASSEMBLY

The assembly sequence is essentially the reverse of disassembly.

#### NOTE

- Install the final shaft bearing until it seats.
- Refer to page 9-7 for water pump mechanical seal installation.

Install the final shaft.  
Install the dowel pins, O-rings, collars and gasket.



Install the engine rear cover and tighten the bolts.

#### TORQUE

5 mm bolts:

8–12 N·m (0.8–1.2 kg-m, 6–9 ft-lb)

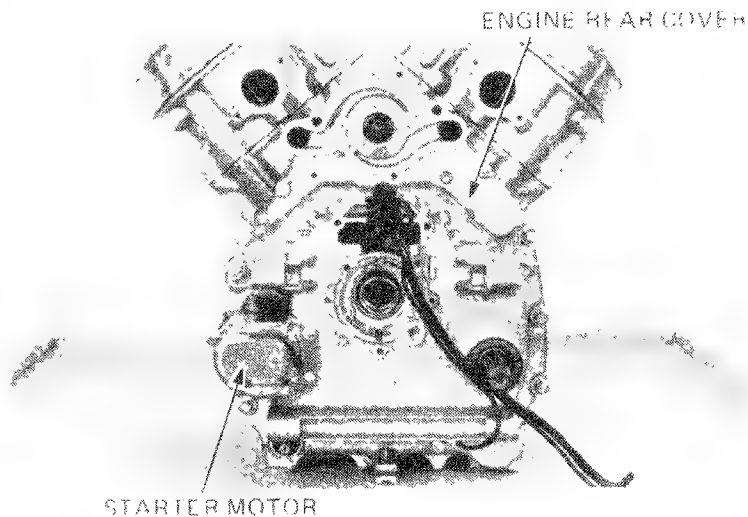
8 mm bolts:

18–25 N·m (1.8–2.5 kg-m, 13–18 ft-lb)

Install the starter motor.

#### NOTE

- Engage the starter drive gear with the engine pin gear before tightening the cover.
- Tighten the rear cover bolts in a crisscross pattern in 2-3 steps.



## SPARK ADVANCER INSTALLATION

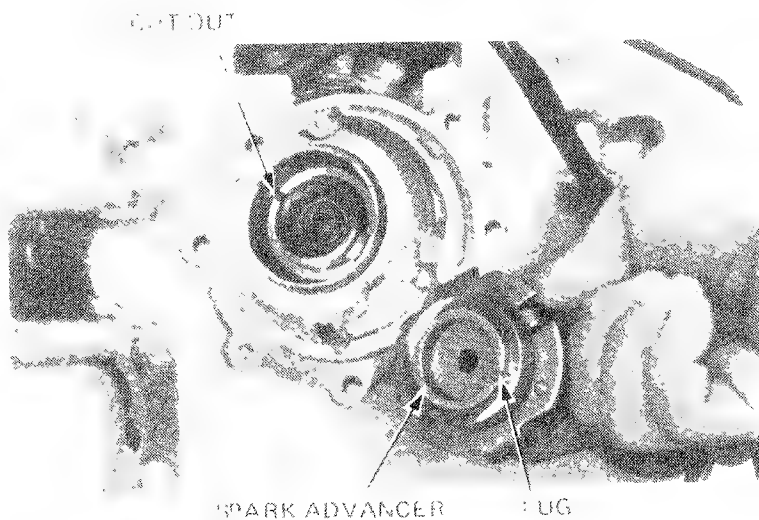
Remove the spark advancer.

1. Insert the spark advancer into the cut out.

2. Tighten the spark advancer with the cut out.

3. Tighten the spark advancer.

TORQUE: 8-12 N·m (0.8-1.2 kg-m, 6-9 ft-lb)



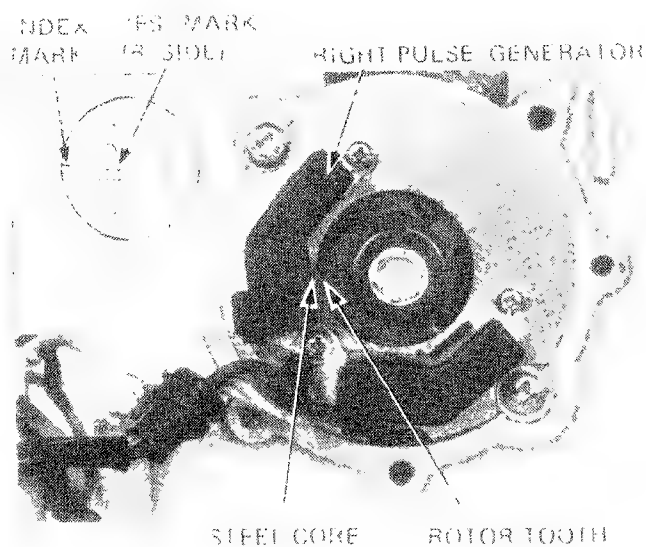
## PULSATION TIMING ADJUSTMENT

Remove the timing inspection hole cap.

Rotate the crankshaft and align the "FS" mark on the crankshaft with the index mark on the rear engine cover.

Install the right pulse generator assembly, aligning the right pulse generator steel core with the rotor tooth.

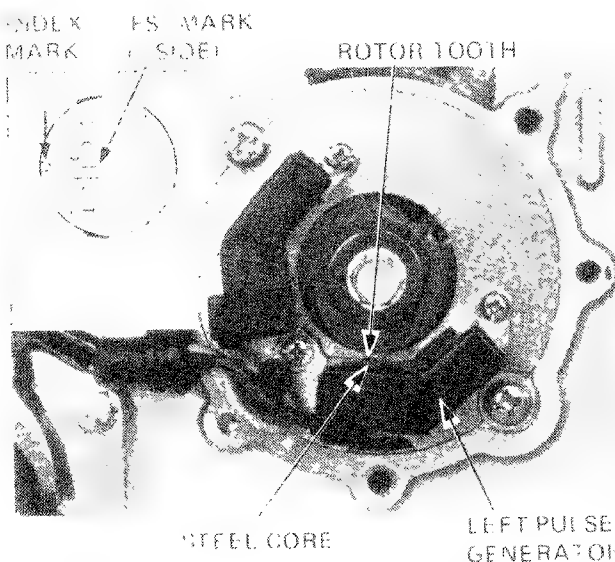
Tighten the screws securely.



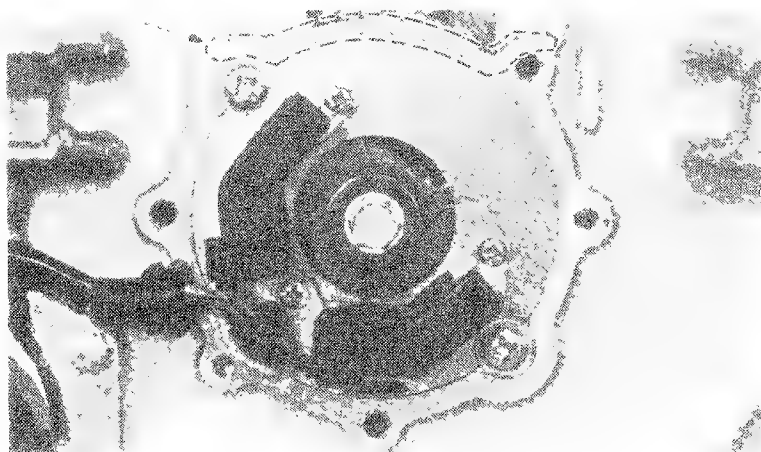
Rotate the crankshaft clockwise and align the "FS" mark on the left side with the index mark on the left engine cover. Check that the rotor tooth is aligned with the left pulse generator steel core.

Check the gap between the rotor tooth and steel core. Adjust if necessary (Page 17-6).

If necessary, move the pulse generator to the left by loosening the generator attaching screws. Tighten the attaching screws.



Apply lubricant to the surface indicated by the arrow to prevent the gasket from drying out.



Install the AC generator cover.



AC GENERATOR COVER

AC GENERATOR INSTALLATION  
The AC generator is mounted on the engine.



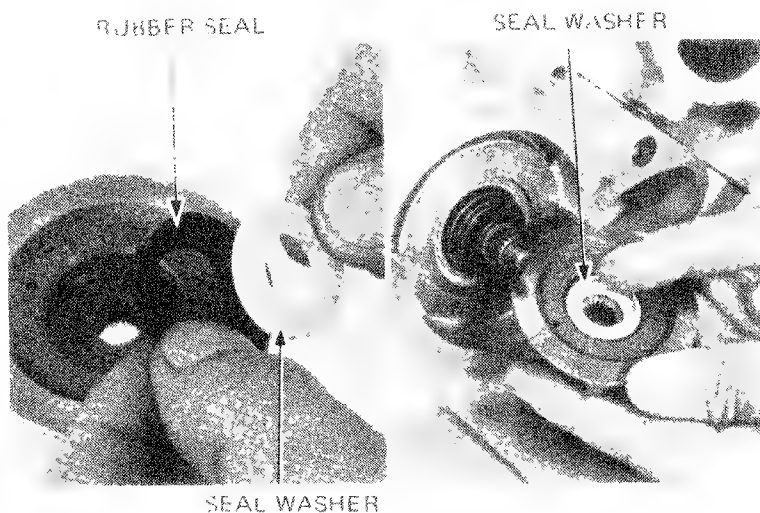
AC GENERATOR



1. Install the rubber seal and seal washer in the impeller housing and apply soapy water to the sliding surfaces.

NOTE:

- 1. Dip the rubber seal in soapy water to facilitate installation.
- 2. Check that the seal rubber is positioned properly.

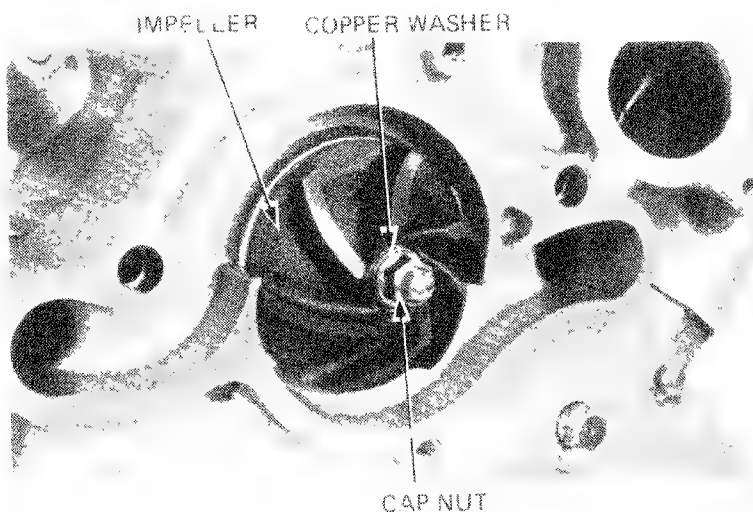


3. Install the impeller, copper washer and cap nut on the crankshaft.

4. Tighten the cap nut.

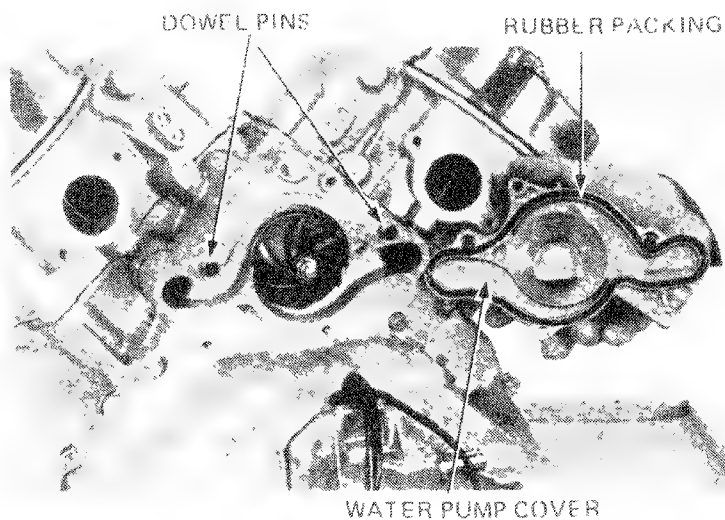
**TORQUE:** 8–12 N·m (0.8–1.2 kg·m, 6–9 ft·lb)

5. Rotate the crankshaft to make sure that the pump rotates freely without binding.



6. Check the pump cover rubber packing for deterioration or damage and replace if necessary.

7. Install the dowel pins in the case and install the cover.





Install the pump cover bolts  
TORQUE:

6 mm bolts:

8–12 N·m (0.8–1.2 kg·m, 6–9 ft·lb)

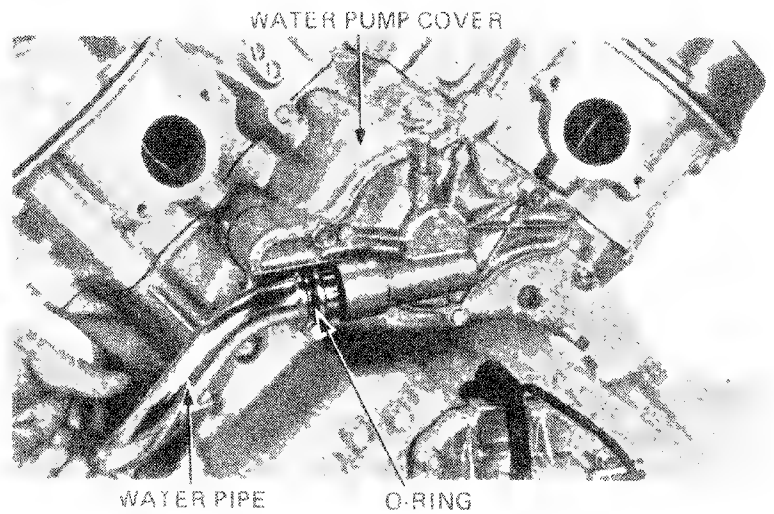
8 mm bolts:

18–25 N·m (1.8–2.5 kg·m, 13–18 ft·lb)

Apply soapy water to the water pipe O-ring and  
seal the water side of the pump cover.

NOTE:

Make sure that the O-ring is not twisted.

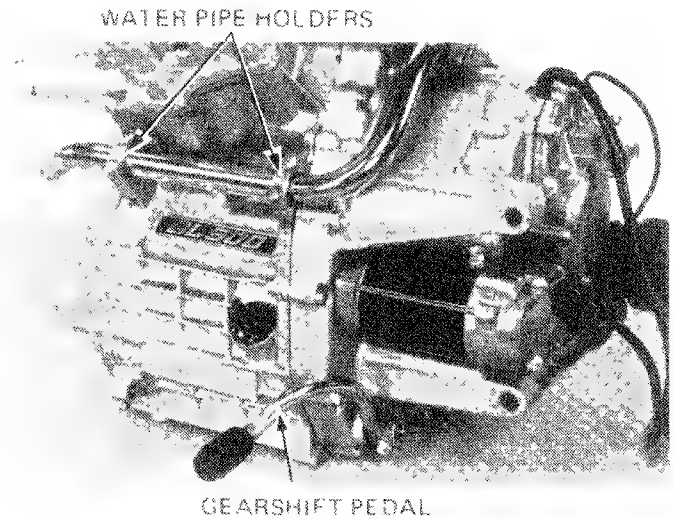


Install the water pipe holders.

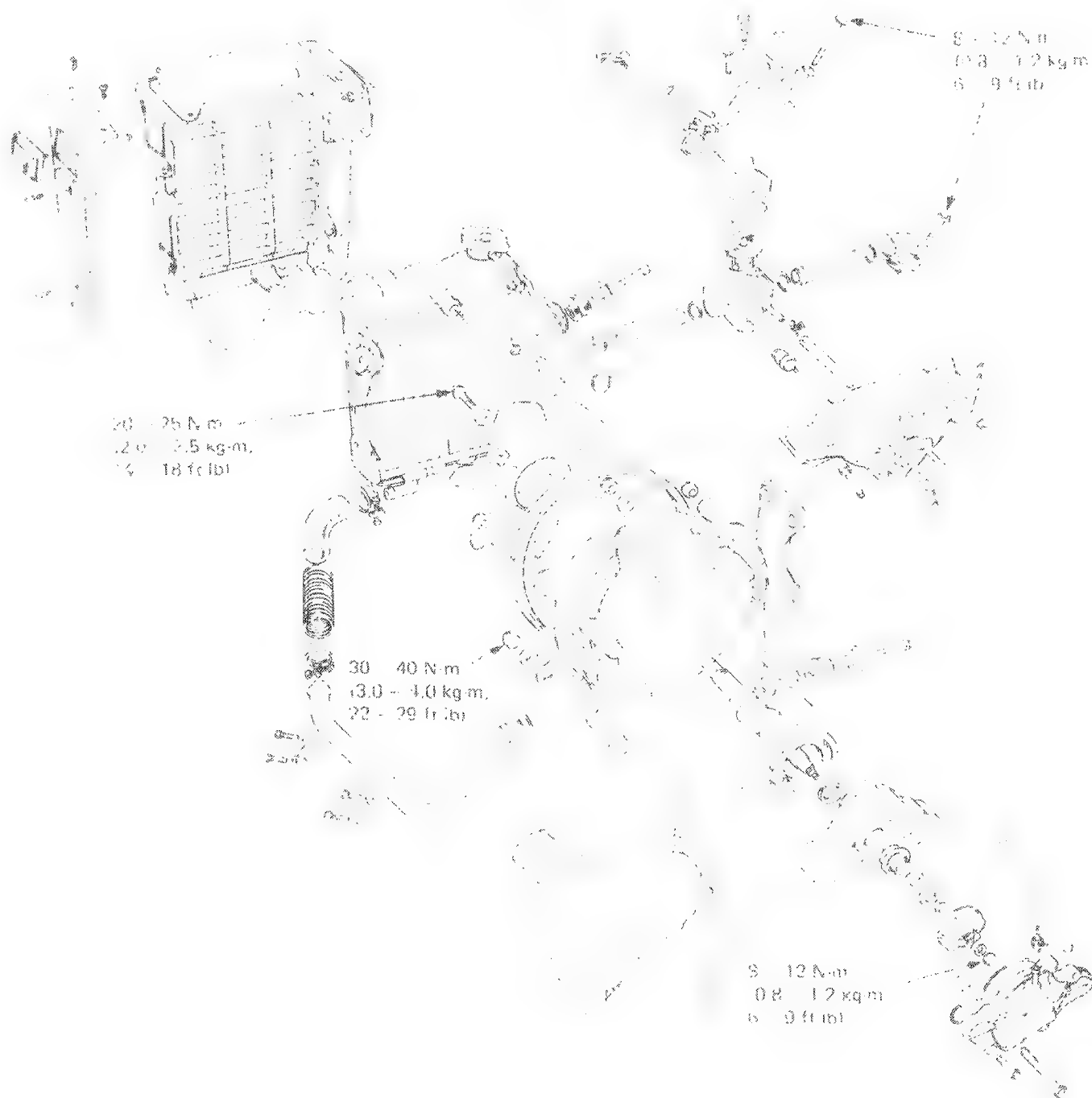
NOTE:

Tighten the upper bolts first, then tighten  
the lower bolts.

Install the gearshift pedal.







# 9. COOLING SYSTEM

|                     |     |                          |     |
|---------------------|-----|--------------------------|-----|
| SERVICE INFORMATION | 9-1 | COOLING FAN REMOVAL      | 9-6 |
| TROUBLESHOOTING     | 9-1 | WATER PUMP MECHANICAL    |     |
| SYSTEM TESTING      | 9-2 | SEAL REPLACEMENT         | 9-7 |
| COOLANT REPLACEMENT | 9-3 | THERMOSTAT INSTALLATION  | 9-8 |
| THERMOSTAT REMOVAL  | 9-3 | COOLING FAN INSTALLATION | 9-9 |
| RADIATOR REMOVAL    | 9-5 | RADIATOR INSTALLATION    | 9-9 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- To service the water pump seal, it is necessary to remove the rear engine cover. All the other cooling system services can be made with the engine in the frame.
- Do not remove the radiator cap when the engine is hot. The coolant is under pressure and severe scalding could result. The engine must be cool before servicing the cooling system.
- Do not splash coolant on painted surfaces. After servicing the system, check for leaks with a radiator tester.
- Refer to Section 3 for water pump service.

### TOOLS

#### Special

Mechanical seal driver attachment

02945-4150400 or 07945-3710200

### Consumables

Radiator cap

07733-0010000 or 07933-2000000

Coolant

07749-0010000 or 07949-6110000

### SPECIFICATIONS

Radiator cap relief pressure

0.75 - 1.05 kg/cm<sup>2</sup> (10.7 - 14.9 psi)

Coolant, properly hydronated test

65% Distilled water + 45% ethylene glycol: -32°C (-25°F)

50% Distilled water + 50% ethylene glycol: -37°C (-34°F)

45% Distilled water + 55% ethylene glycol: -44.5°C (-48°F)

Coolant capacity

With fan and engine

1.3 liters (1.4 U.S. qt.)

Without fan

0.2 liters (0.21 qt.)

With system

2.0 liters (2.1 qt.)

Thermostat

Begins to open: 80° to 84°C (176° to 183°F)

Fully open: 93° to 97°C (199° to 205°F)

Valve lift: Minimum of 8 mm at 95°C (203°F)

Boiling point with 50/50 mixture

Unpressurized: 107.7°C (226°F)

Cap on, pressurized: 125.6°C (258°F)

### TORQUE VALUES

Cooling fan bolt

20 - 25 N.m (2.0 - 2.5 kg.m, 14 - 18 ft.lb.)

Engine fan gear nut

30 - 40 N.m (3.0 - 4.0 kg.m, 22 - 29 ft.lb.)

## TROUBLESHOOTING

### Engine Temperature Too High

- Faulty temperature gauge or gauge sensor
- Thermostat stuck closed
- Faulty radiator cap
- Insufficient coolant
- Hoses blocked or radiator hoses or water leaks
- Radiator dirty

### Engine Temperature Too Low

- Faulty temperature gauge or gauge sensor
- Thermostat stuck open

### Coolant Leaks

- Faulty pump oil seal
- Deteriorated O-rings
- Radiator hose damage



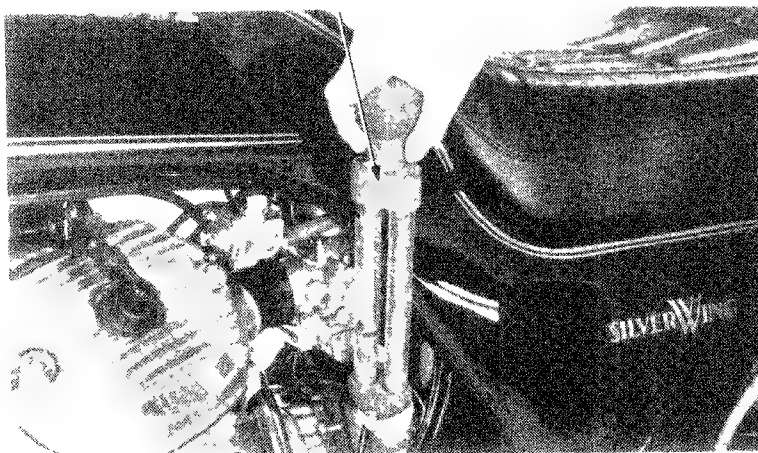
## COOLING SYSTEM

### SYSTEM TESTING

#### CAUTION

Before operation, mix with an antifreeze tester for maximum corrosion protection. A 50-50% solution of ethylene glycol and distilled water is recommended.

#### ANTIFREEZE TESTER



#### RADIATOR CAP INSPECTION

Before testing the radiator cap, replace the radiator cap if it does not hold pressure, or if relief pressure is too high or too low. It must hold specified pressure for at least six seconds.

#### NOTE

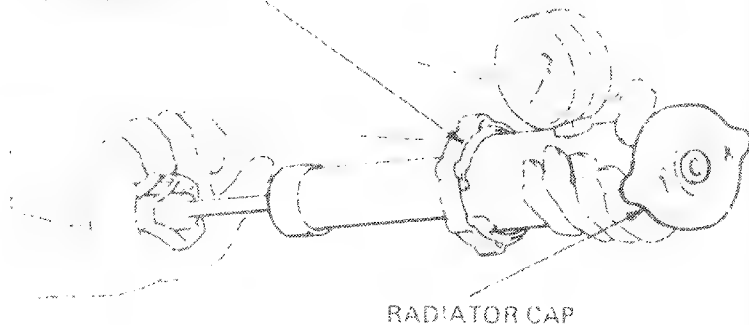
Before attaching the cap on the tester, moisten the seating surfaces.

#### RADIATOR CAP RELIEF PRESSURE

90 - 115 kPa (0.9 - 1.15 kg/cm<sup>2</sup>, 12.8 - 2.1 psi)

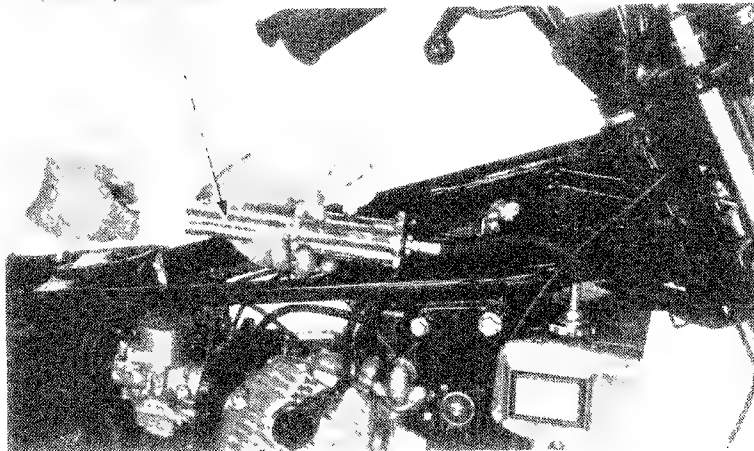
#### COOLING SYSTEM TESTER

(Local purchase)



#### COOLING SYSTEM TESTER

(Local purchase)



1. Connect the radiator, engine and hoses, and check for leaks.

#### CAUTION

Excess pressure can damage the radiator. Do not exceed 115 kPa (1.15 kg/cm<sup>2</sup>, 14.7 psi).

2. After the cap is connected to the system, will maintain specified pressure for at least six seconds.

## COOLANT REPLACEMENT

### **WARNING**

*The engine must be cool before servicing the cooling system, or severe scalding may result.*

1. Remove the seat and fuel tank.
2. Remove the radiator cap.
3. Remove the radiator cover by removing the side screws.

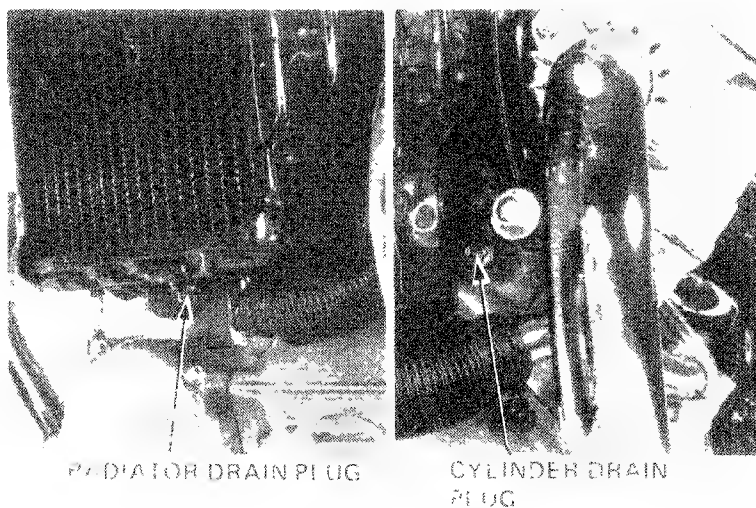


4. Remove the radiator drain plug and drain the radiator of 1 liter.
5. Remove coolant from the cylinders. Remove the cylinder drain plugs (about 0.5 liter).
6. Flush the cylinder and radiator drain ports.

### **CAUTION**

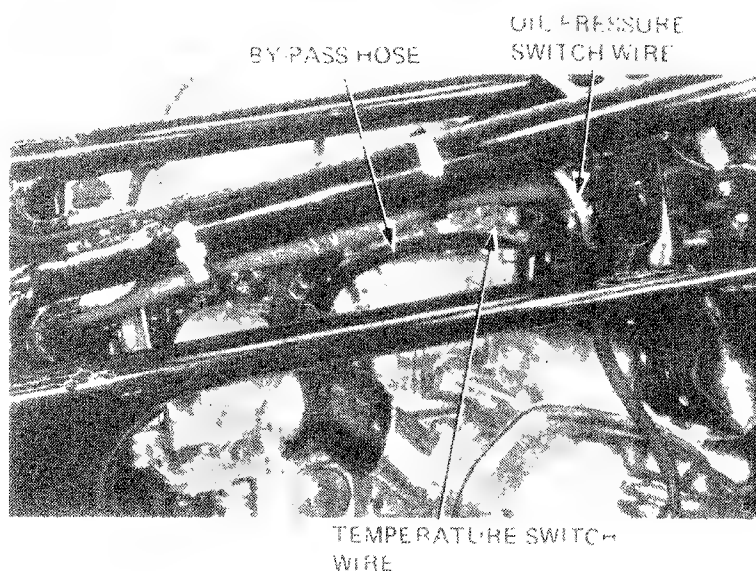
*Do not over-tighten the radiator drain plug.*

7. Fill the system with a 50:50 mixture of distilled water and ethylene glycol.



## THERMOSTAT REMOVAL

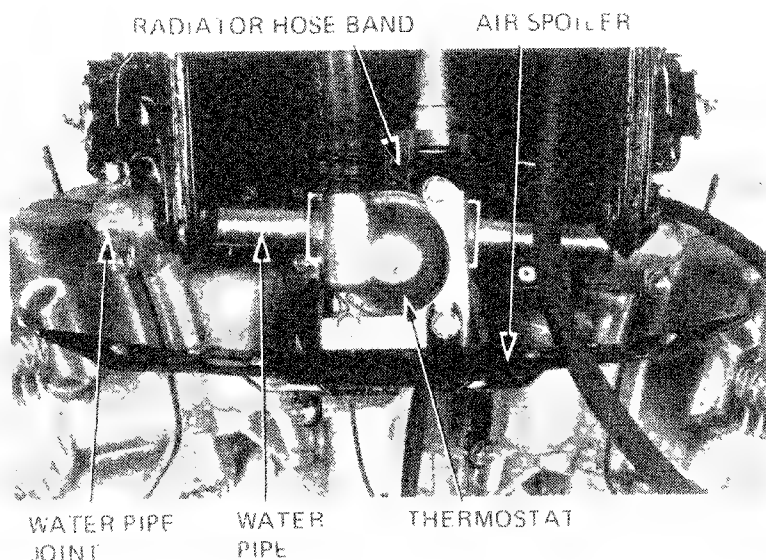
1. Remove the seat and fuel tank.
2. Remove the radiator drain plug and drain the coolant.
3. Disconnect the by-pass hose.
4. Disconnect the temperature and oil pressure switch wires.



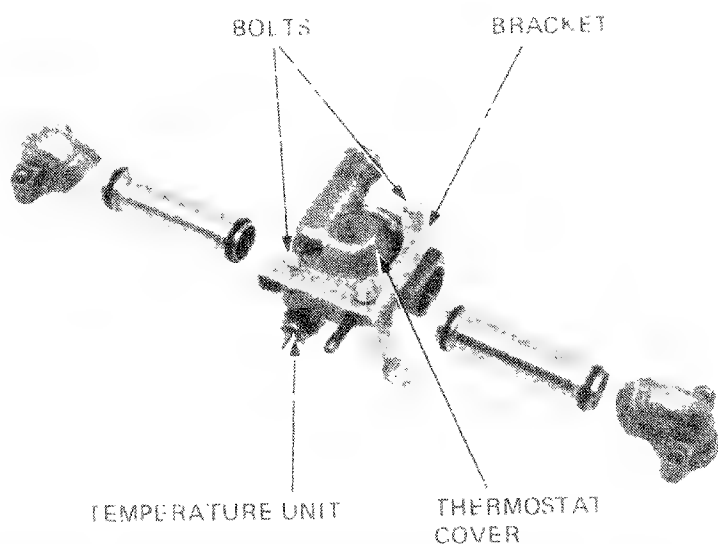


## COOLING SYSTEM

- Remove the air spoiler.
- Remove the water pipe joints and water pipes.
- Remove the thermostat bracket bolts.
- Remove the radiator hose band and pull the thermostat out of the hose.



- Separate the thermostat bracket from the thermostat housing.
- Remove the thermostat cover and take out the thermostat.
- Remove the water temperature unit.



### TEMPERATURE UNIT INSPECTION

Suspend the unit in oil and measure the resistance through the unit as the oil heats.

| Temperature | 60°C   | 85°C  | 110°C | 120°C |
|-------------|--------|-------|-------|-------|
|             | 140°F  | 185°F | 230°F | 248°F |
| Resistance  | 104.0Ω | 43.9Ω | 20.3Ω | 16.1Ω |

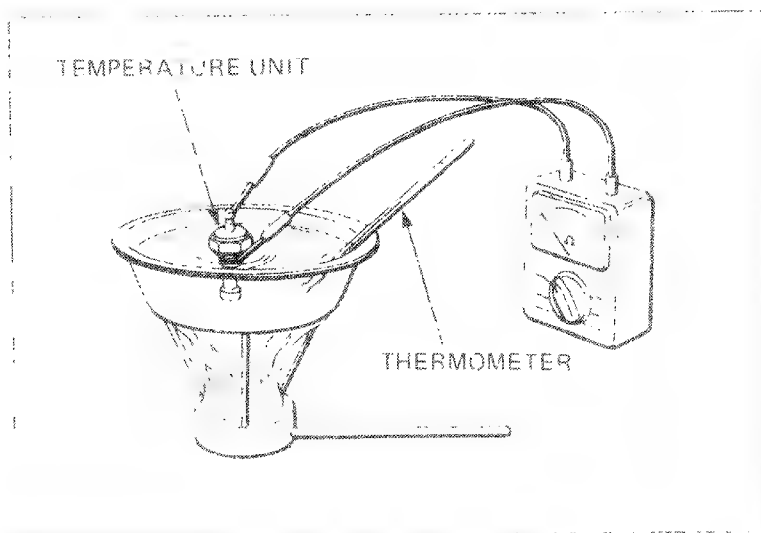
Do not let the unit or thermometer touch the pan or false readings will result.

#### **WARNING**

*Wear gloves and eye protection.*

#### **NOTE**

Oil must be used as the heated liquid to check operation above 100°C (212°F).



### THERMOSTAT INSPECTION

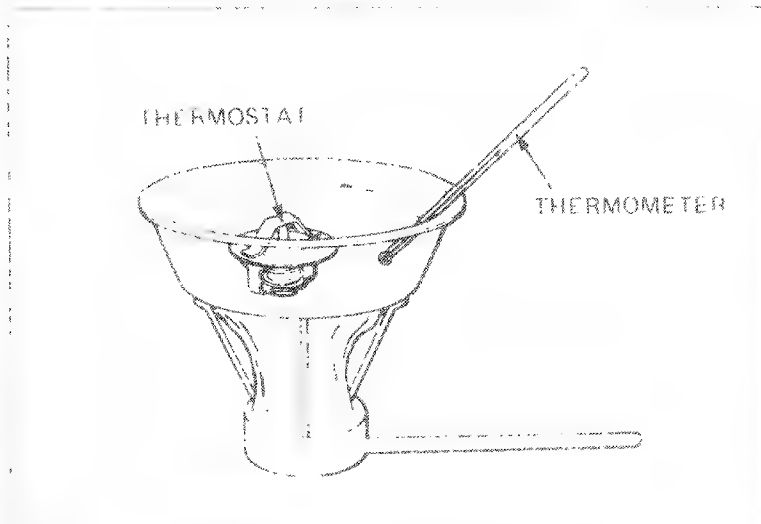
1. Inspect the thermostat visually for damage.
2. Suspend the thermostat in hot water to check operation.
3. Do not let the thermostat or thermometer touch the radiator; false readings will result.

#### Water Data

|              |                                         |
|--------------|-----------------------------------------|
| Spring range | 80 to 94 C (176 to 183 F)               |
| Full range   | 95 C (203 F)                            |
| Capacity     | 8.3 dm <sup>3</sup> (0.31 int. minimum) |

#### Test

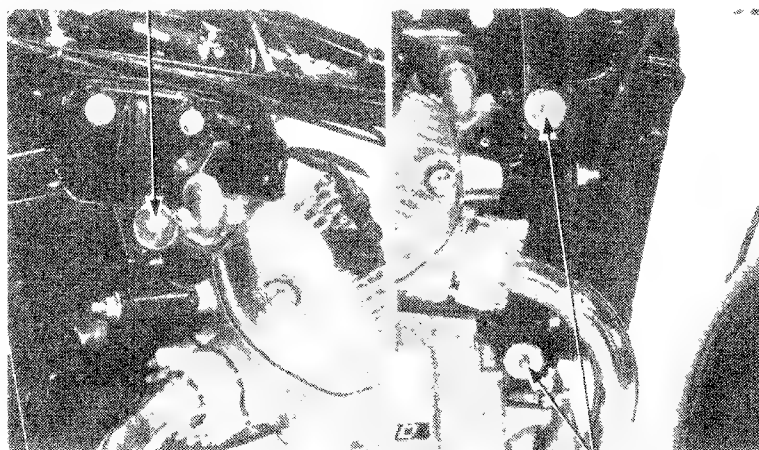
1. Replace the thermostat valve stays open at room temperature, or if it responds at temperatures other than those specified.
2. Water must be checked by applying heat for five minutes.



### RADIATOR REMOVAL

1. Remove the seat and fuel tank.
2. Drain the radiator from the radiator.
3. Remove the three radiator mounting bolts.

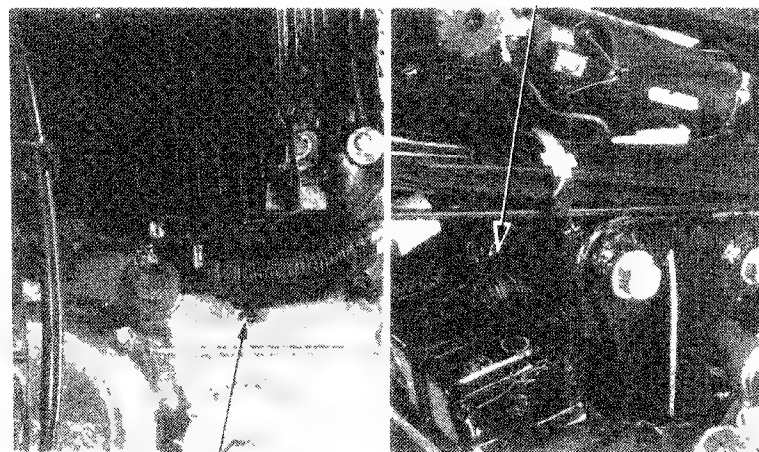
MOUNTING BOLT



MOUNTING BOLTS

4. Remove the upper and lower radiator hose bands.

UPPER HOSE BAND



LOWER HOSE BAND



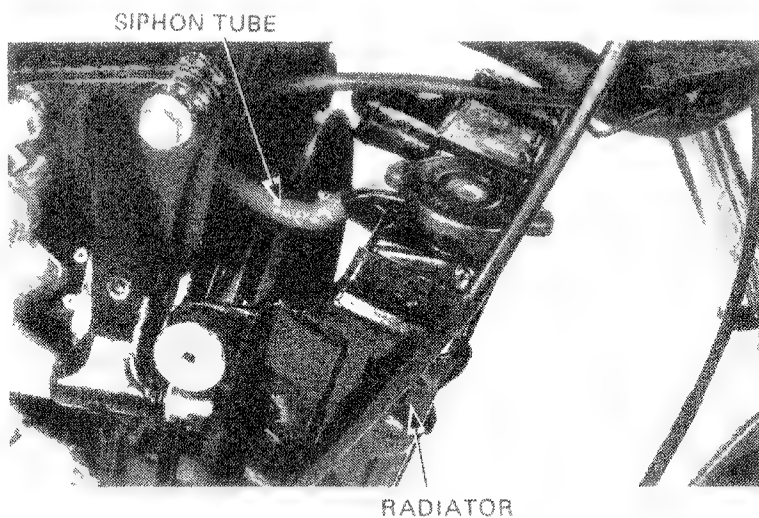


## COOLING SYSTEM

Pull the radiator and disconnect the radiator hoses from the radiator.  
Disconnect the siphon tube from the radiator.

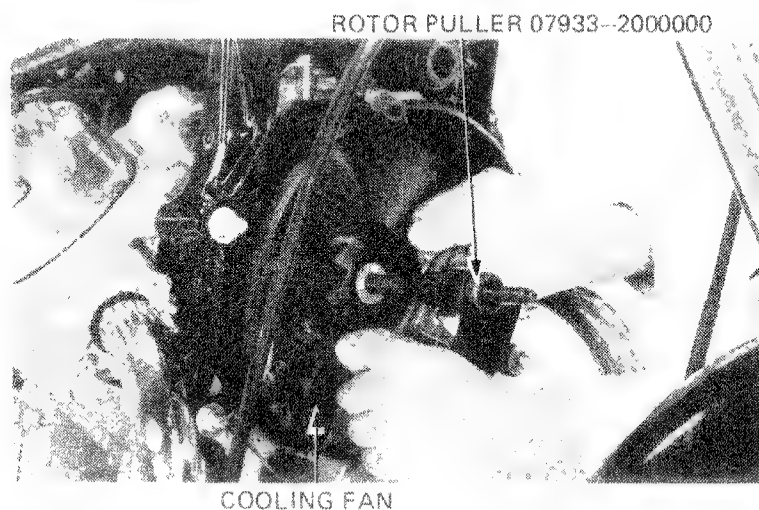
### CAUTION

Do not damage the radiator fins.

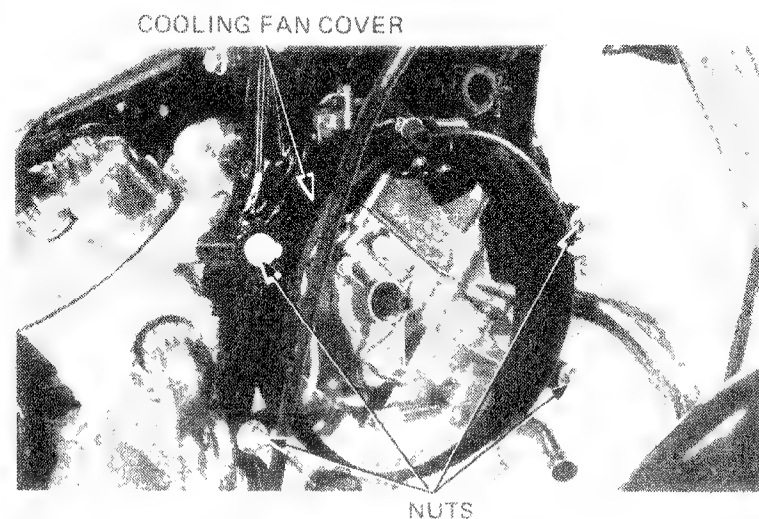


## COOLING FAN REMOVAL

Remove the fan bolt.  
Remove the cooling fan with a ROTOR PULLER.



Remove the cooling fan cover by removing the four nuts.





## WATER PUMP MECHANICAL SEAL REPLACEMENT

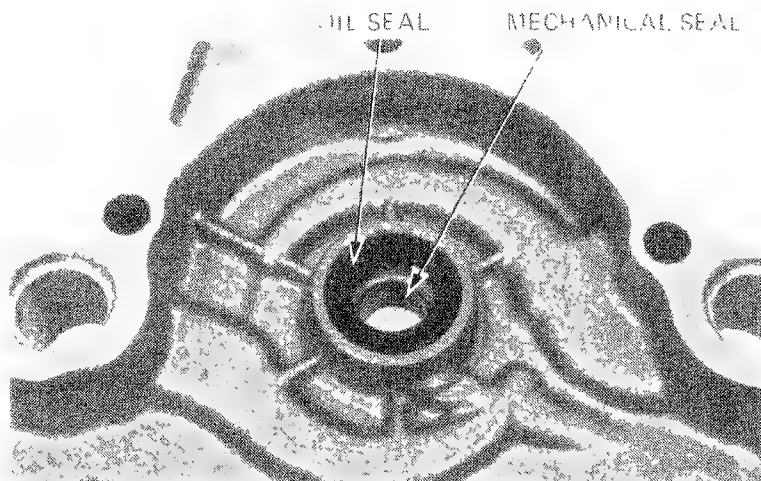
Remove the engine oil cover (Page 8-9)

NOTE:

Remove the oil seal and the mechanical seal.

NOTE:

Do not touch the oil seal lip when it is being removed.

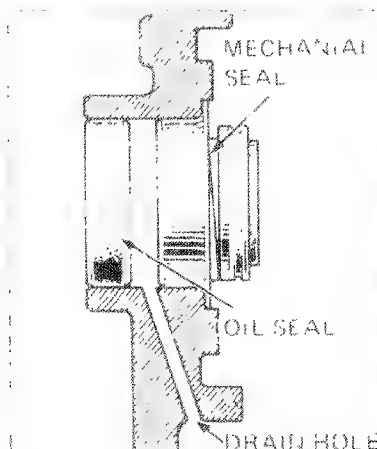


### INSTALLATION

Apply a thin coat of liquid sealant to the water pump edge of the mechanical seal.

NOTE:

Check that the water pump drain hole is clear.



Install the mechanical seal in the position of the seal driver. The mechanical seal driver attachment must be used to install the seal.

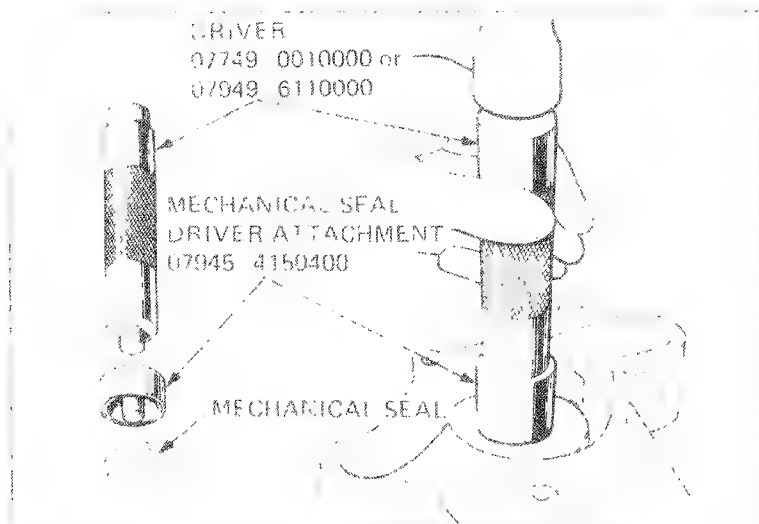
NOTE:

Assemble the driver as follows.

Install the seal driver attachment to the driver handle. Place the mechanical seal in the attachment.

Drive in the seal squarely.

Install the seal cover (Page 8-9)



## THERMOSTAT INSTALLATION

1. Insert the thermostat into the thermostat case and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

2. Attach the thermostat to the water pipes into the thermostat case as follows:

- a. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

3. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

4. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

5. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

6. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

7. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

8. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

9. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

10. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

11. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

12. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

13. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

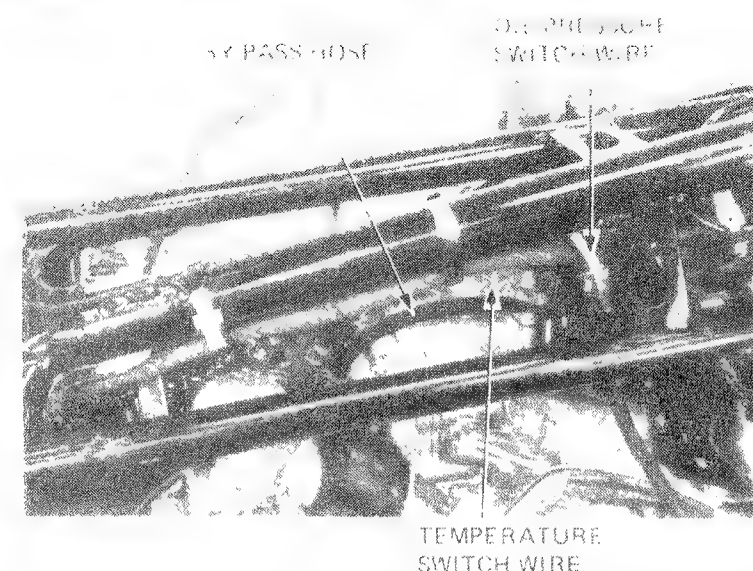
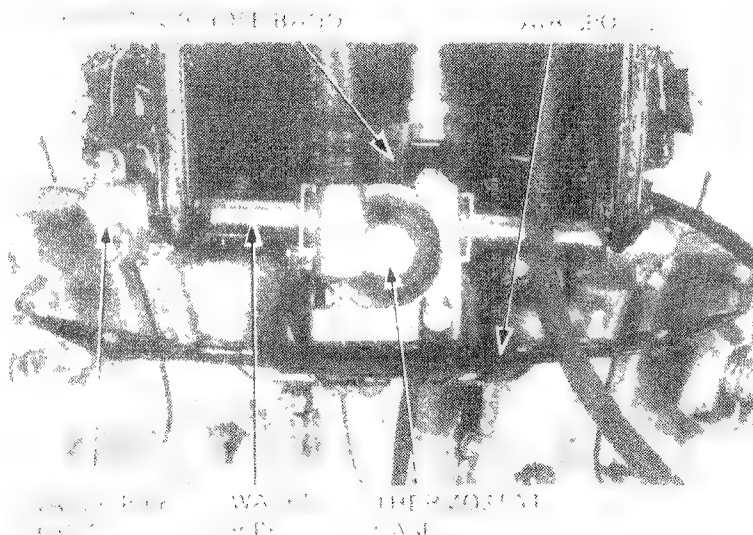
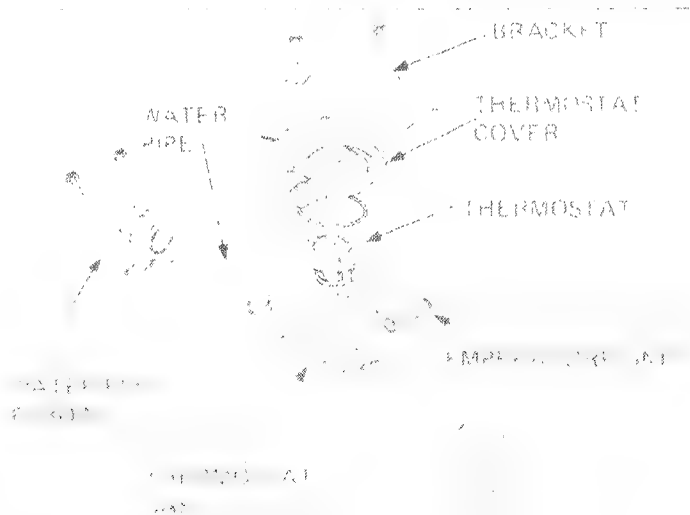
14. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

15. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

16. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

17. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.

18. Attach the thermostat to the water pipe and secure by sliding in the thermostat case and attaching thermostat cover and bracket.



## COOLING FAN INSTALLATION

Tighten the cylinder drain plug before installing the cooling fan.

Install the cooling fan cover.

Tighten the nuts.

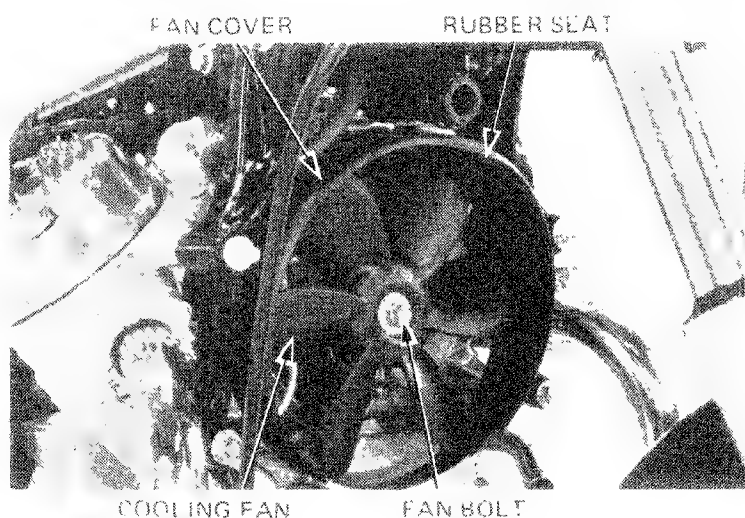
**TORQUE:** 30–40 N·m (3.0–4.0 kg-m,  
22–29 ft-lb)

Install the cooling fan and tighten the fan bolt.

**TORQUE:** 20–25 N·m (2.0–2.5 kg-m,  
14–18 ft-lb)

### NOTE

Make sure that the fan cover rubber seat is correctly positioned.



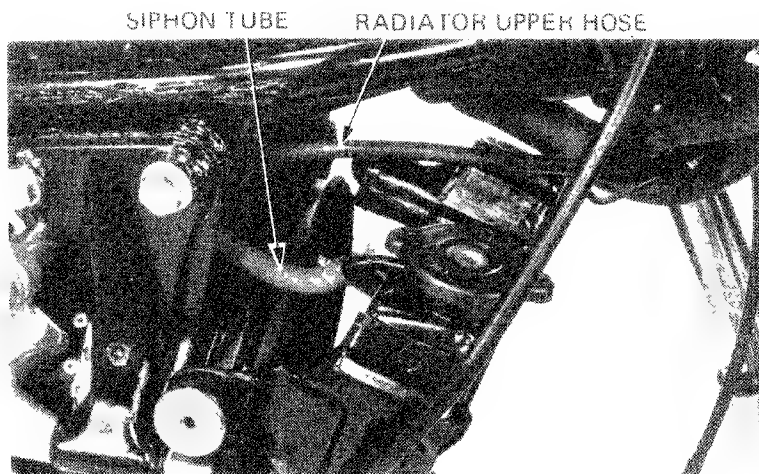
## RADIATOR INSTALLATION

### NOTE

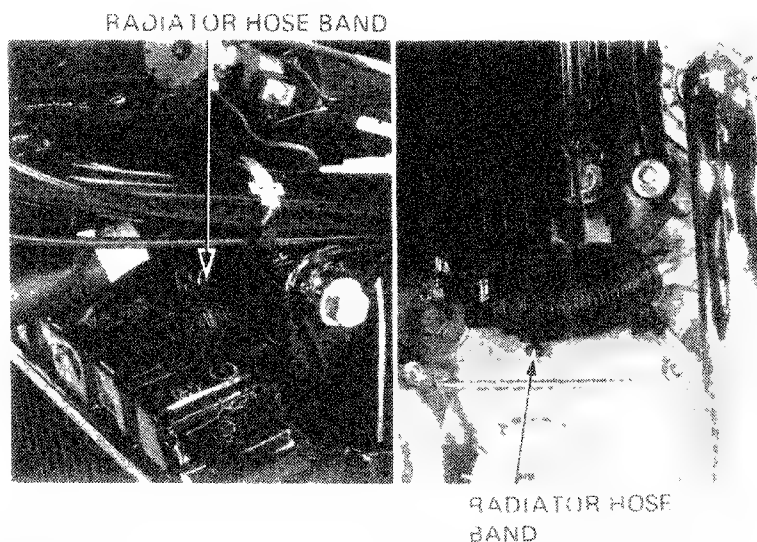
Do not damage the radiator fins.

Connect the radiator lower hose to the radiator.  
Connect the siphon tube.

Connect the radiator upper hose by pushing the radiator backward.



Tighten the upper and lower hose bands securely.



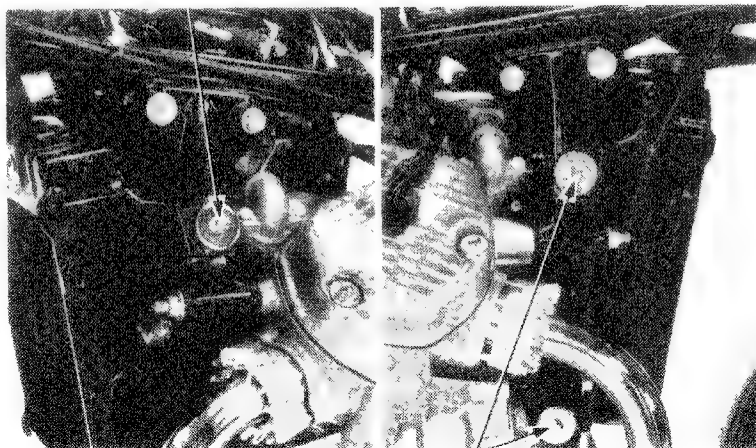
## COOLING SYSTEM



**HONDA**  
GL500  
GL500 INTERSTATE

Tighten the radiator mount bolts.  
Install the radiator cover.

MOUNTING BOLT



MOUNTING BOLT

Fill the system with a 50—50 mixture of distilled water and ethylene glycol.

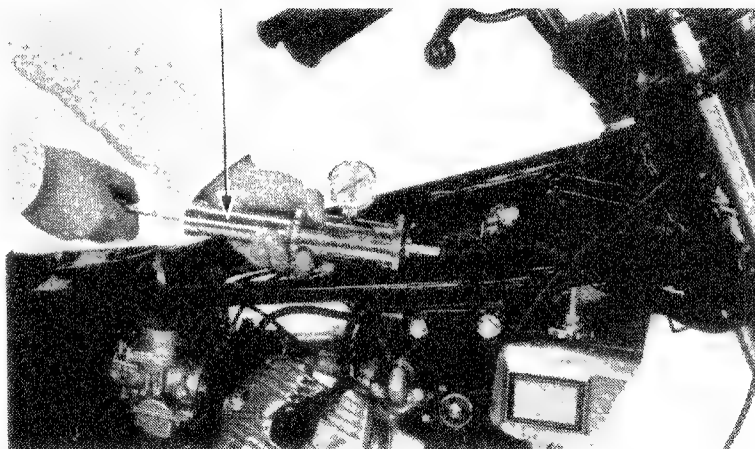
Bleed air from the radiator

- Start the engine and run until there are no air bubbles in the coolant, and the level stabilizes.
- Stop the engine and add coolant up to the proper level if necessary.
- Reinstall the radiator cap.
- Check the level of coolant in the reserve tank and raise to the correct level if the level is low.

Pressurize the radiator, engine and hoses and check for leaks.

Repair or replace components if the system will not hold specified pressure for at least 6 seconds.

COOLING SYSTEM TESTER



### CAUTION

*Excessive pressure can damage the radiator.*

*Do not exceed 105 kPa (1.05 kg/cm<sup>2</sup>, 14.9*

*psi).*



**HONDA**  
GL500  
GL500 INTERSTATE

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MEMO





|                         |       |
|-------------------------|-------|
| SERVICE INFORMATION     | 10- 1 |
| TROUBLESHOOTING         | 10--1 |
| CAM CHAIN REMOVAL       | 10--2 |
| CAMSHAFT REMOVAL        | 10--3 |
| ROCKER ARM REMOVAL      | 10--5 |
| ROCKER ARM INSTALLATION | 10--6 |
| CAMSHAFT INSTALLATION   | 10--7 |
| VALVE TIMING ADJUSTMENT | 10--9 |

## SERVICE INFORMATION

### CAUTION INSTRUCTIONS

- \* Do not use a screwdriver to adjust the valve clearance. Use the feeler gauge to adjust the valve clearance.
- \* Do not use a screwdriver to adjust the valve clearance. Use the feeler gauge to adjust the valve clearance.
- \* Do not use a screwdriver to adjust the valve clearance. Use the feeler gauge to adjust the valve clearance.

### TOOLS

#### Special

|                                   |               |
|-----------------------------------|---------------|
| Gear holder                       | 07924-4150000 |
| Lock nut socket wrench 17 x 27 mm | 07907-4150000 |

### SPECIFICATIONS

|                      |       | Standard        |                 | Unit            |
|----------------------|-------|-----------------|-----------------|-----------------|
| Item                 |       | Standard        |                 | Service limits  |
| Cam height           | IN    | 37.046 (1.4585) |                 | 36.038 (1.4196) |
|                      | EX    | 37.015 (1.4573) |                 | 36.011 (1.4134) |
| Journal O.D.         | Front | 27.959 (1.0988) | 0.0025 (0.0010) | 27.957 (1.0975) |
|                      | Rear  | 27.959 (1.0988) | 0.0025 (0.0010) | 27.957 (1.0975) |
| Arm O.D.             |       | 1.116 (0.0439)  | 0.0013 (0.0005) | 1.115 (0.0437)  |
| Chain O.D.           |       | 1.140 (0.0449)  | 0.0013 (0.0005) | 1.139 (0.0447)  |
| Camshaft holder O.D. |       | 27.900 (1.0945) | 0.0025 (0.0010) | 27.898 (1.0943) |
| Camshaft gear O.D.   |       | 27.900 (1.0945) | 0.0025 (0.0010) | 27.898 (1.0943) |

### VALVE TIMING

|                 |                 |                 |
|-----------------|-----------------|-----------------|
| Adjustment      | IN              | EX              |
| Valve clearance | 0.0025 (0.0010) | 0.0025 (0.0010) |

## TROUBLESHOOTING

### Excessive Noise

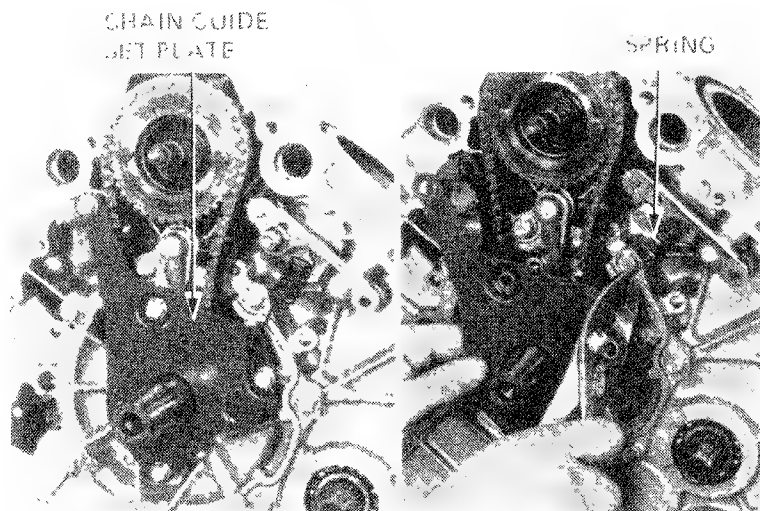
1. Incorrect cam chain adjustment
2. Incorrect valve adjustment
3. Worn or damaged rocker arms or camshaft
4. Worn or damaged cam chain tensioner or cam chain guide
5. Worn cam sprocket teeth
6. Worn camshaft holder



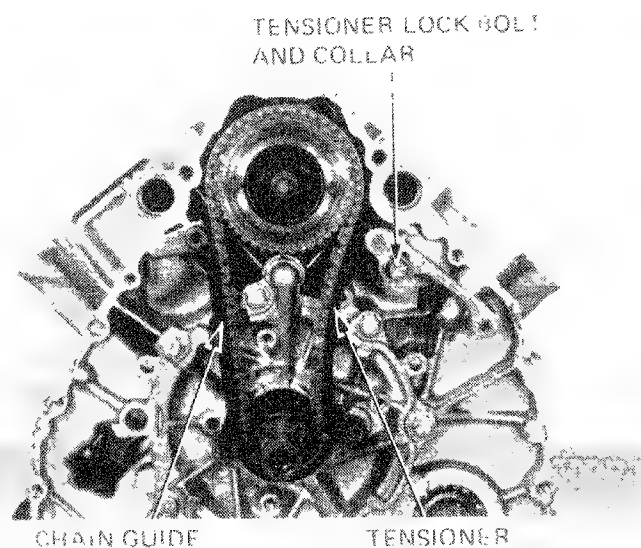


## CAM CHAIN REMOVAL

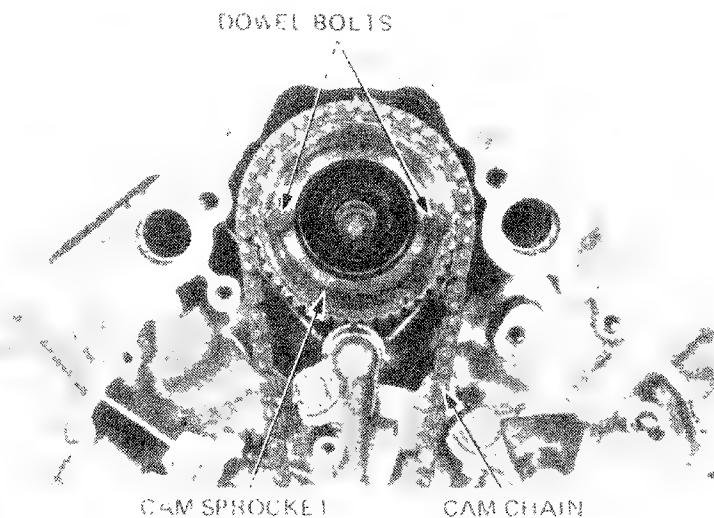
1. Remove the timing belt (Page 8-2).
2. Remove the flywheel (Page 8-4).
3. Remove the cam chain guide ret plate bolt.
4. Remove the cam chain guide ret plate with spring from the cam shaft.
5. Remove the cam chain guide ret plate from the spring.



6. Remove the tensioner lock bolt and collar.
7. Remove the tensioner and cam chain guide.
8. Check the cam chain guide and tensioner for wear or damage on the upper surfaces.

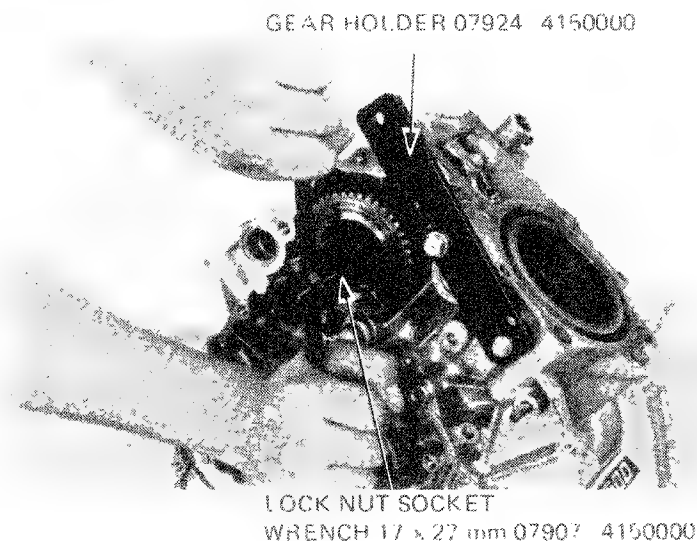


9. Remove the cam sprocket, dowel bolts, cam sprocket and cam chain.

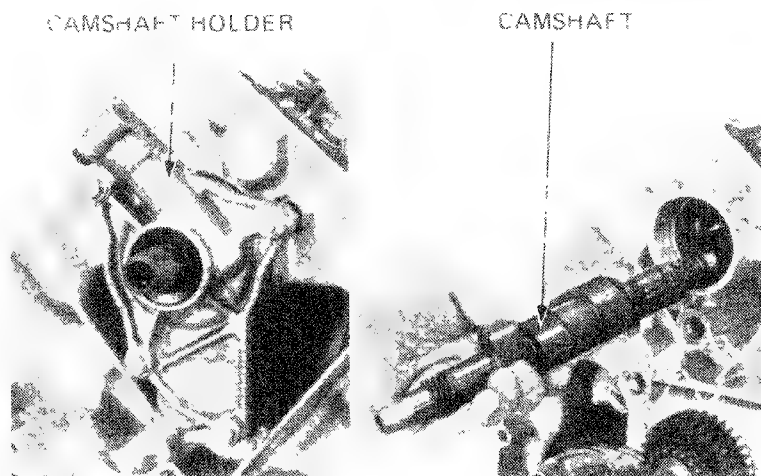


## CAMSHAFT REMOVAL

Remove the cylinder head (Page 6-3).  
Temporarily install the cam sprocket.  
Hold the cam sprocket with a GEAR HOLDER to prevent it from turning.  
Loosen the 27 mm nut and remove the cam sprocket and cam sprocket boss.



Remove the radiator and cooling fan (Page 9-5).  
Remove the camshaft holder.  
Remove the camshaft from the front.



## CAMSHAFT INSPECTION

Measure the O.D. of each camshaft bearing journal.

### SERVICE LIMIT.

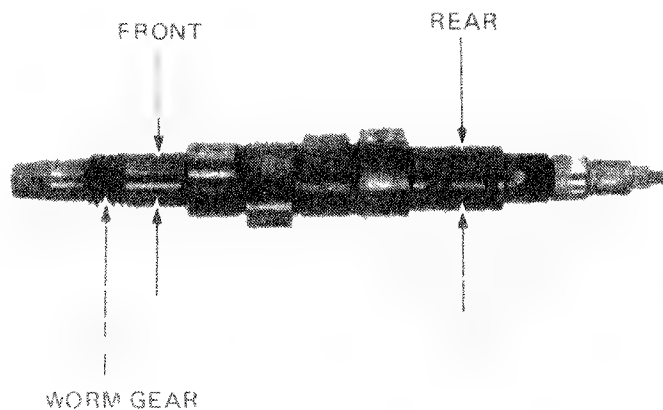
FRONT: 21.910 mm (0.8526 in)

REAR: 25.910 mm (1.0201 in)

Calculate the journal and bearing clearance.

SERVICE LIMIT: 0.260 mm (0.0102 in)

Inspect the worm gear for wear or damage.





## CAMSHAFT/CAM CHAIN

Measure the length of each cam lobe  
Inspect the lobes for wear or damage.

### SERVICE LIMIT

IN: 36.058 mm (1.4196 in)

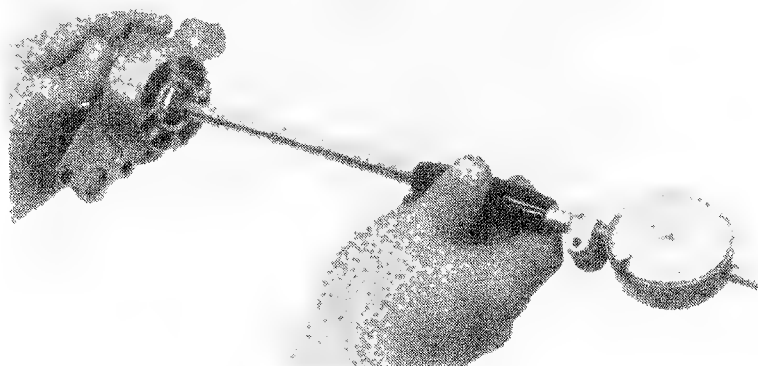
EX: 36.027 mm (1.4184 in)



## CAMSHAFT TROLDER INSPECTION

Measure the camshaft holder I.D. as shown.

SERVICE LIMIT: 22.050 mm (0.8681 in)



## CAMSHAFT BEARING INSPECTION

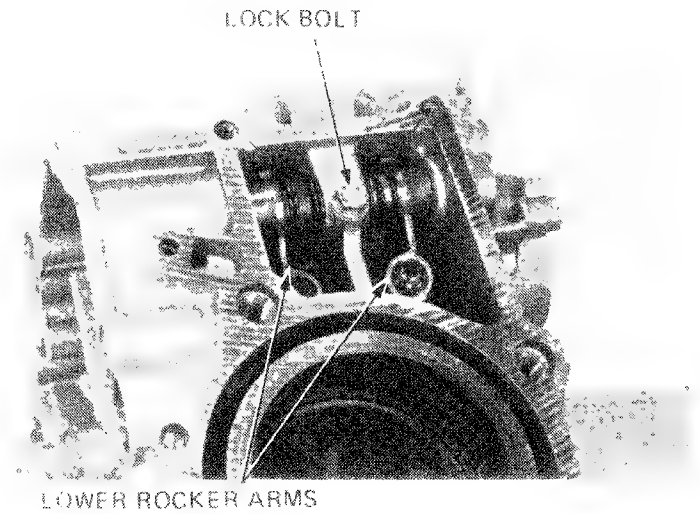
Measure the bearing I.D.

SERVICE LIMIT: 26.170 mm (1.0303 in)

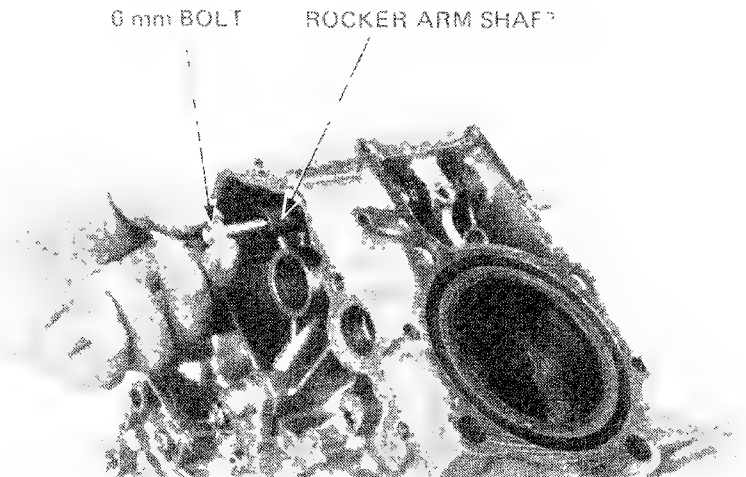


## ROCKER ARM REMOVAL

Remove the rocker arm shaft lock bolts.



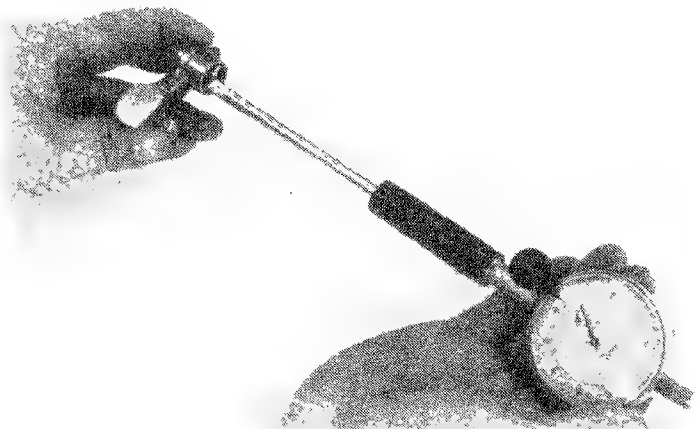
Insert 6 mm bolt into the rocker arm shaft and remove the rocker arm shaft.  
Remove the rocker arm and wave washer.



## ROCKER ARM INSPECTION

Inspect the rocker arms for wear or damage to the  
arm shaft contact surfaces or clogged oil holes.  
Measure the I.D. of each rocker arm.

**SERVICE LIMIT: 14.046 mm (0.5530 in)**





## CAMSHAFT/CAM CHAIN

### ROCKER ARM SHAFT INSPECTION

Measure each rocker arm shaft O.D.

**SERVICE LIMIT: 13.966 mm (0.5510 in)**

Inspect the shaft for wear damage.

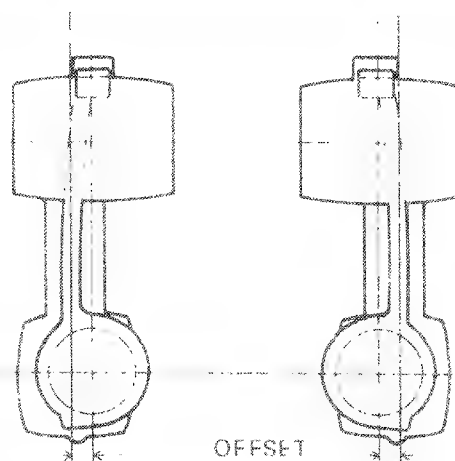
Calculate the clearance of the shaft and the rocker arm.

**SERVICE LIMIT: 0.080 mm (0.0031 in)**



### ROCKER ARM INSTALLATION

Install the rocker arms with the offset toward the intake side.

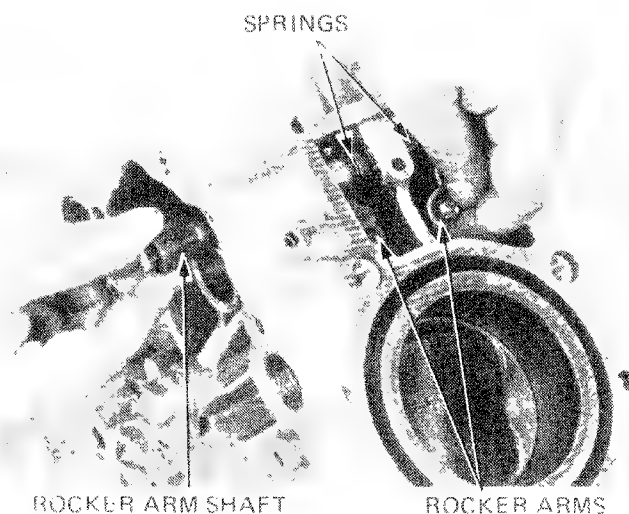


Install the rocker arms and thrust springs in the cylinder block, and then insert the rocker arm shafts.

#### NOTE:

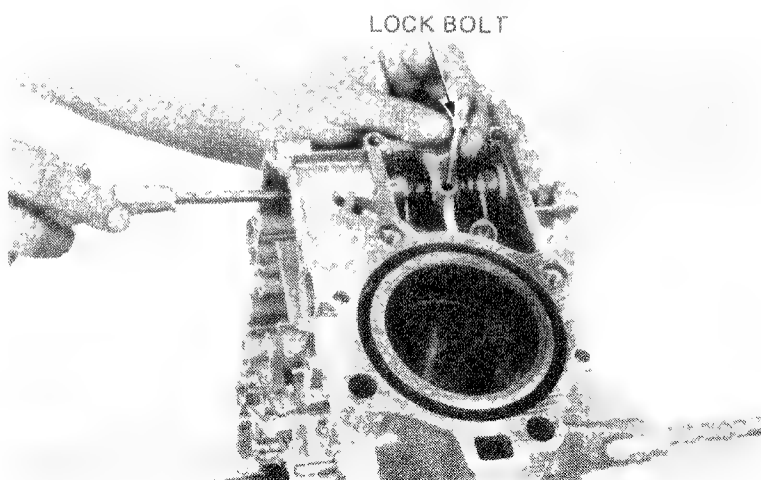
Lubricate the rocker arm shafts with engine oil before installation.

Install each rocker arm shaft with the threaded end facing the rear (cam sprocket side).



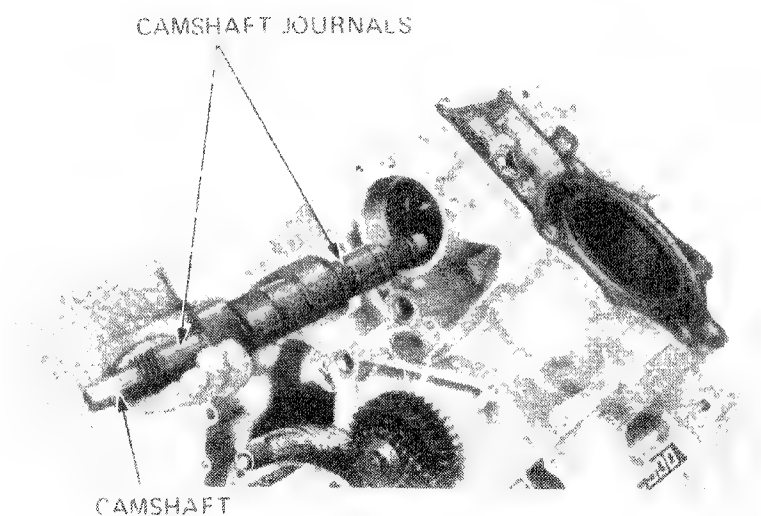


Rotate the rocker arm shaft with a screwdriver to align with the lock bolt hole. Install the lock bolt.

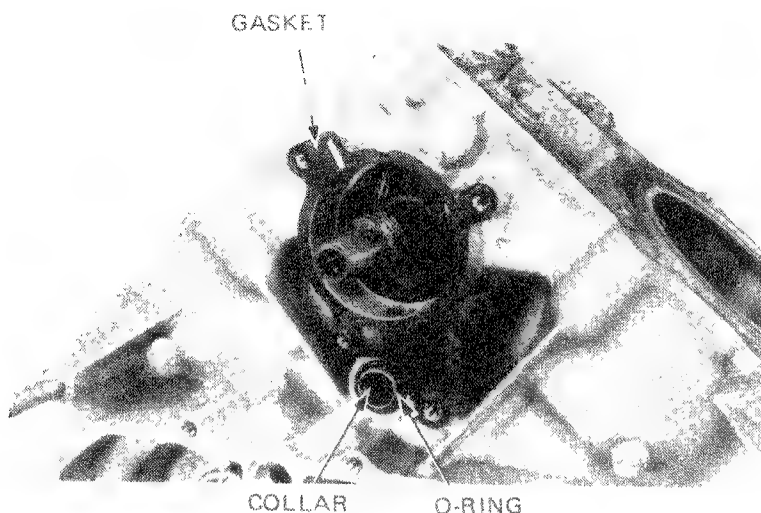


## CAMSHAFT INSTALLATION

Lubricate the camshaft journals with MULTIPURPOSE NLG1 No. 2 (MoS<sub>2</sub> additive) GREASE. Install the camshaft thrust washer. Insert the camshaft from the front.



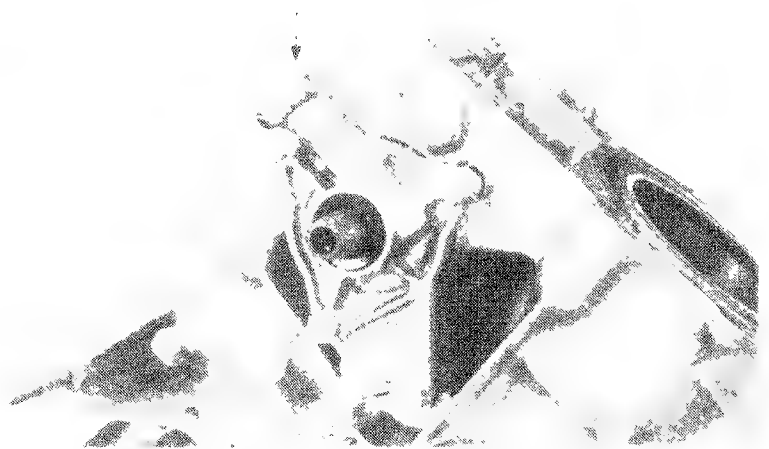
Install the camshaft holder gasket, O-ring and collar.





## CAMSHAFT HOLDER

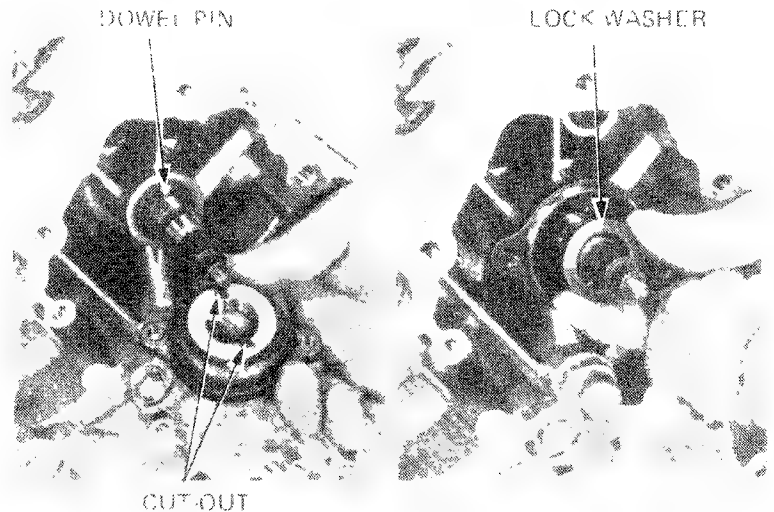
1. Remove the cam sprocket and seal up the engine.
2. Install the camshaft holder.



3. Set the camshaft holder at 90° by giving the cut-out mark a downward push. Insert the dowel pin.
4. Insert the lock nut and lock washer and tighten the lock nut properly.

### NOTE

Insert the lock washer with the mark "OUT-SIDE" facing out.



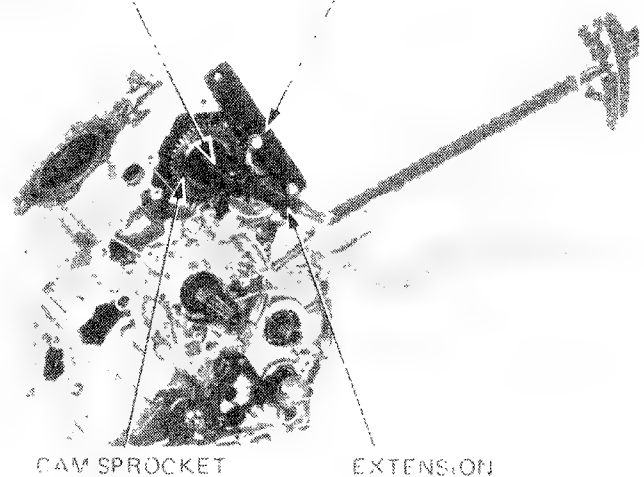
5. Install the cam sprocket and finger tighten the bolts. Hold the cam sprocket with the GEAR HOLDER. Tighten the lock nut.

**TORQUE:** 80-100 N·m (8.0-10.0 kg-m,  
58-72 ft-lb)

6. Remove the cam sprocket.

LOCK NUT SOCKET  
WRENCH 17 x 27 mm  
07907-4150000

GEAR HOLDER  
07924-4150000

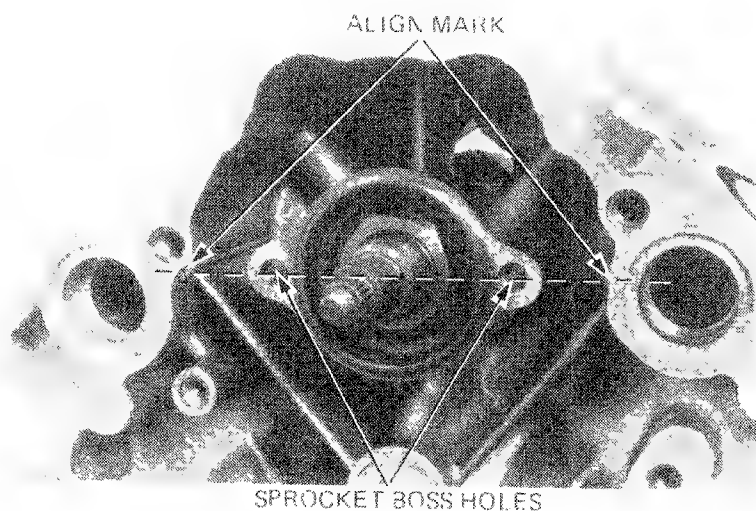






## VALVE TIMING ADJUSTMENT

Align the cam sprocket boss with the aligning marks on the cylinder block.

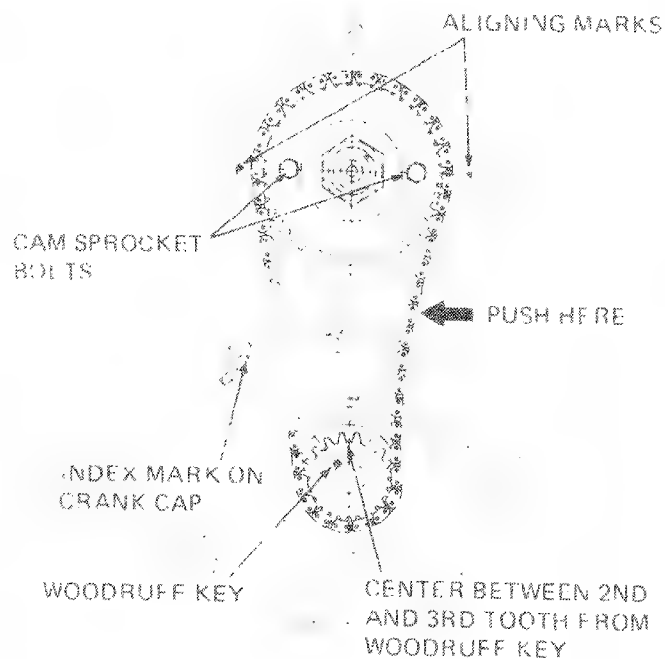


Rotate the crankshaft to bring the left piston to TDC.

Adjust the valve timing by observing the following:  
Make sure the cam sprocket bolts are in line with the aligning marks on the cylinder block.  
Check that the flywheel woodruff key aligns with the index mark on the crankshaft cap.

### NOTE

When inspecting the valve timing, push the cam chain from the right side so the tensioner side of the chain is pulled taut.



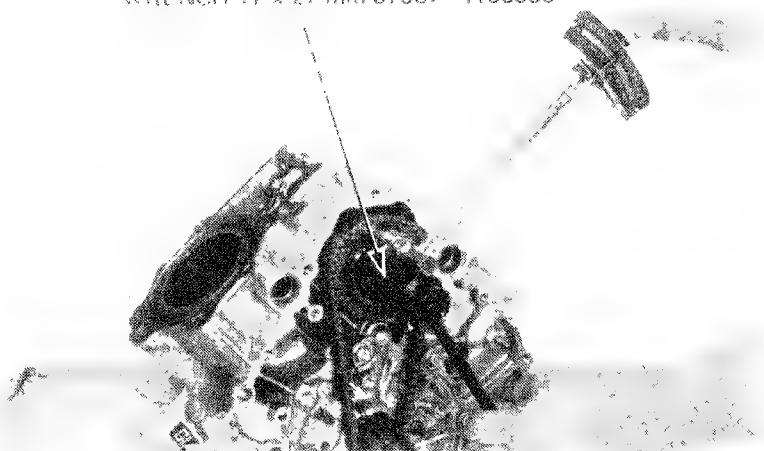


Hold the camshaft with the LOCK NUT SOCKET WRENCH.

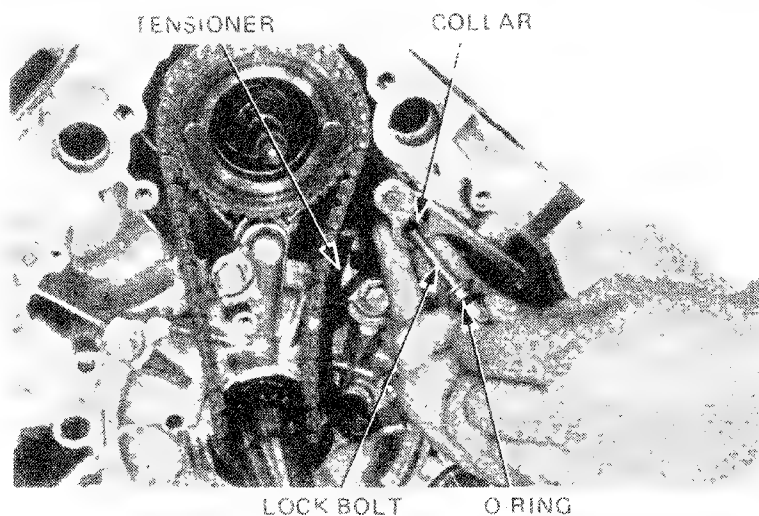
Tighten the arm sprocket bolts.

**TORQUE** 16–20 N·m (1.6–2.0 kg·m,  
12–14 ft·lb)

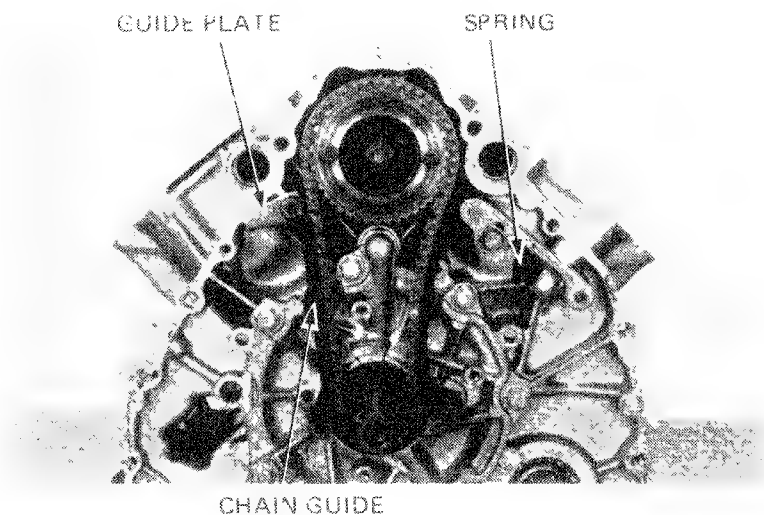
LOCK NUT SOCKET  
WRENCH 17 x 27 mm 07907–4150000



Install the cam chain tensioner.  
Install the O-ring on the lock nut.  
Slide the collar into the tensioner arm and install the lock bolt. Do not tighten the lock nut at this time.



Slide the tensioner spring.  
Install the cam chain guide and guide plate.

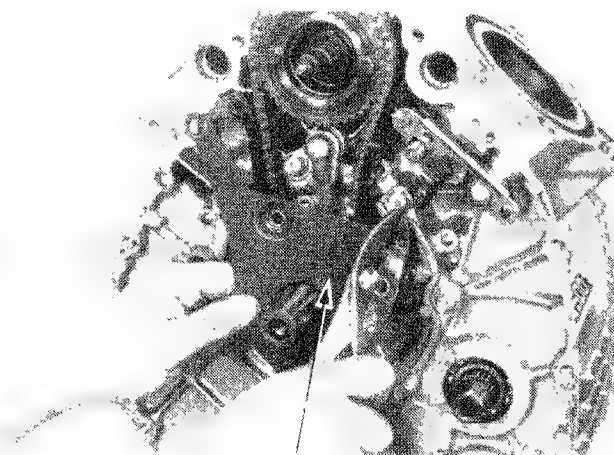


Remove the chain guide set plate and  
the chain guide plate.

Fig. 10-10-10-1

TORQUE: 8-12 N·m (0.8-1.2 kg-m, 6-9 ft-lb)

Fig. 10-10-10-2



CHAIN GUIDE SET PLATE

Insert the 1/2 inch of engine oil into the oil pockets  
of the cylinder block.

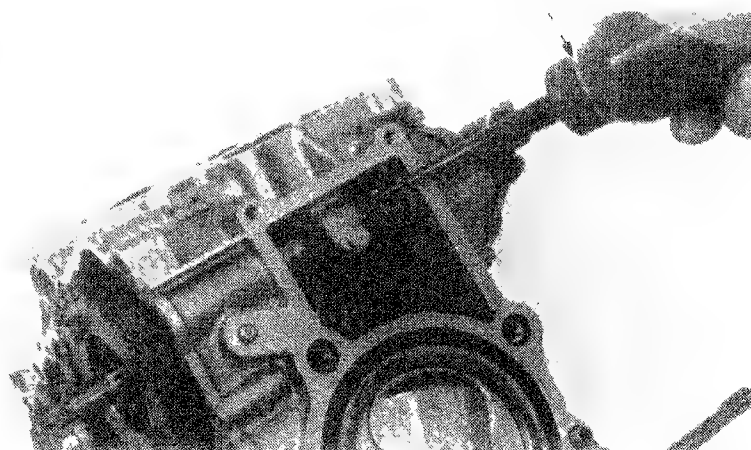
Install the cylinder (Page 8-8) and the cylinder head  
(Page 10).

Check the valve clearance (Page 3-1).

Start the engine (See section 5).

See the maintenance of the engine oil (Section 2).

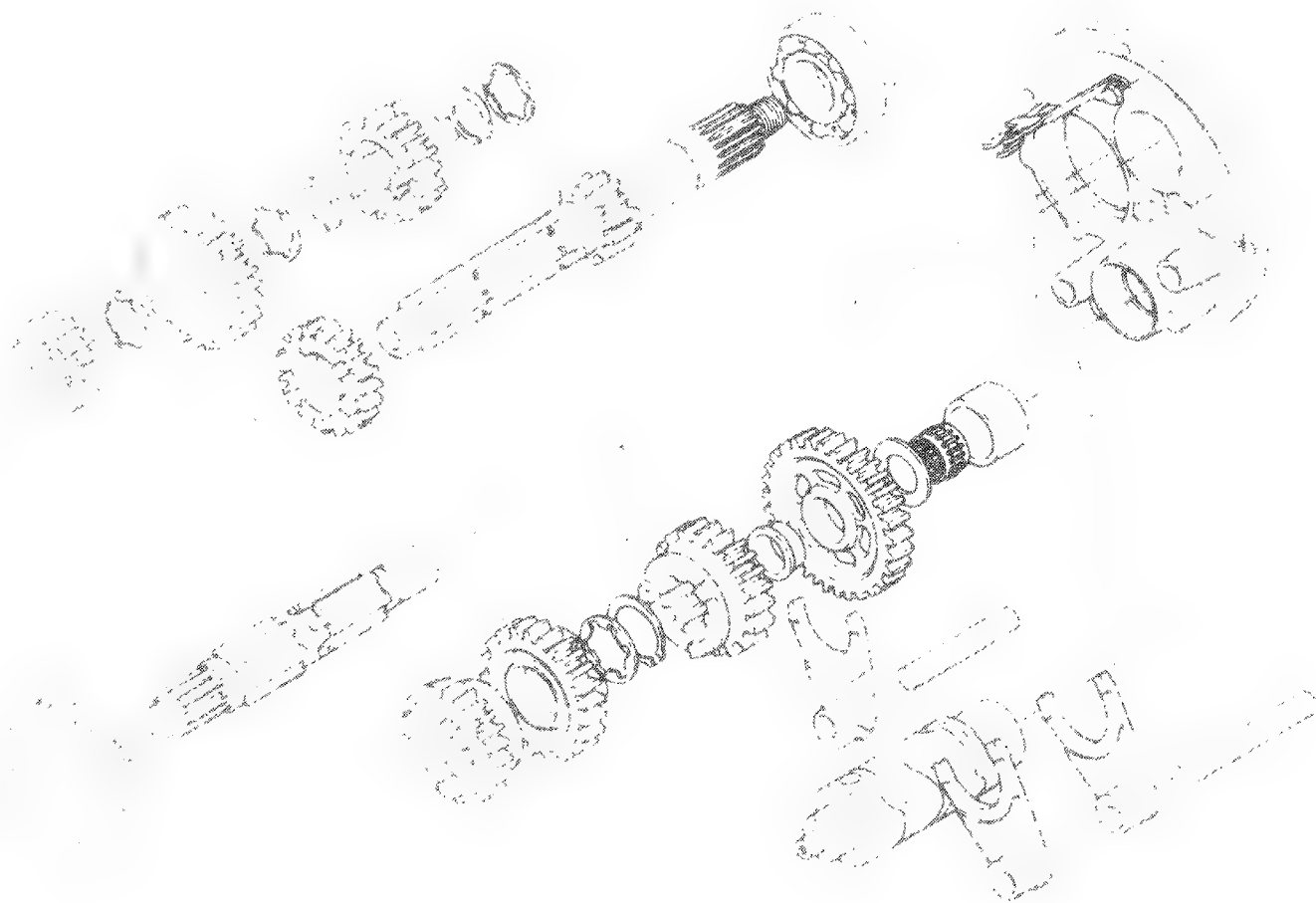
ENGINE OIL





**HONDA**  
GL500  
GL500 INTERSTATE

EXPLANATION



|                                |       |
|--------------------------------|-------|
| SERVICE INFORMATION            | 11-1  |
| TROUBLESHOOTING                | 11-2  |
| GEARSHIFT LINKAGE REMOVAL      | 11-3  |
| FINAL SHAFT DISASSEMBLY        | 11-3  |
| FINAL SHAFT ASSEMBLY           | 11-4  |
| TRANSMISSION DISASSEMBLY       | 11-4  |
| TRANSMISSION ASSEMBLY          | 11-10 |
| GEARSHIFT LINKAGE INSTALLATION | 11-14 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- Before reassembling, lubricate the M4 and M5 gears with MULTIPURPOSE NLG1 No. 2 (molybdenum disulfide additive) GREASE or an equivalent.
- Apply engine oil to the other gears.
- To service the transmission, it is necessary to remove the engine from the frame.

### TOOLS

#### Special

|                         |               |
|-------------------------|---------------|
| Crank cap driver        | 07945-4150100 |
| Bearing remover 20 mm   | 07936-3710600 |
| Pin clapper over handle | 07936-3710100 |
| Bearing remover weight  | 07936-3710200 |
| Slide hammer            | 07946-3710200 |
| Bearing remover drive   | 07946-3790200 |
| Attachment              | 07945-3330100 |
| Pin                     | 07947-3710000 |

#### Common

|                       |                                                    |
|-----------------------|----------------------------------------------------|
| Attachment 52 x 47 mm | 07746-0010300 or 07945-3330100                     |
| Pin                   | 07749-0010000                                      |
| Attachment 52 x 58 mm | 07746-0010400 or 07946-3710200                     |
| Pin 28 mm             | 07746-0040600                                      |
| Attachment 62 x 65 mm | 07746-0010500                                      |
| Pin 13 mm             | 07746-0040500                                      |
| Attachment 52 x 35 mm | 07746-0010100 or 07946-3640000<br>or 07946-6920100 |



## SPECIFICATIONS

Unit : mm (in)

|                    | Item                        | Standard                      | Service Limit                 |               |
|--------------------|-----------------------------|-------------------------------|-------------------------------|---------------|
| Transmission       | M2, M3, M4 and M5 gear I.D. | 25.020-25.041 (0.9850-0.9859) | 25.10 (0.988)                 |               |
|                    | C1 gear I.D.                | 24.020-24.041 (0.9457-0.9465) | 24.10 (0.949)                 |               |
|                    | C2 gear I.D.                | 27.520-27.541 (1.0835-1.0843) | 27.60 (1.087)                 |               |
|                    | C3 and C4 gear I.D.         | 25.020-25.041 (0.9850-0.9859) | 25.10 (0.988)                 |               |
|                    | C5 gear I.D.                | 32.000-32.025 (1.2598-1.2608) | 32.10 (1.264)                 |               |
|                    | C1 gear bushing             | I.D.                          | 20.020-20.041 (0.7882-0.7890) | 20.06 (0.790) |
|                    |                             | O.D.                          | 23.984-24.005 (0.9443-0.9451) | 23.95 (0.943) |
|                    | Mainshaft O.D.              | 24.940-24.959 (0.9819-0.9827) | 24.91 (0.981)                 |               |
|                    | Countershaft O.D.           | At C1                         | 19.987-20.000 (0.7869-0.7874) | 19.96 (0.786) |
|                    |                             | At C2                         | 27.459-27.480 (1.0811-1.0818) | 27.43 (1.080) |
|                    |                             | At C3 and C4                  | 24.959-24.980 (0.9826-0.9835) | 24.93 (0.981) |
|                    |                             | At C5                         | 31.950-31.975 (1.2579-1.2586) | 31.91 (1.256) |
| Shift drum         | Gear to-bushing clearance   |                               | 0.15 (0.006)                  |               |
|                    | O.D.                        | 34.950-34.975 (1.3760-1.3770) | 34.90 (1.374)                 |               |
|                    | I.D.                        | 35.00-35.025 (1.3780-1.3789)  | 35.06 (1.380)                 |               |
| Shift fork         | Claw thickness              | 5.930-6.000 (0.233-0.236)     | 5.50 (0.217)                  |               |
|                    | I.D.                        | 13.000-13.018 (0.5118-0.5125) | 13.05 (0.514)                 |               |
| Fork shaft         | O.D.                        | 12.966-12.984 (0.5105-0.5112) | 12.95 (0.510)                 |               |
| Final shaft spring | Free length                 | 73.0 (2.87)                   | 72.0 (2.83)                   |               |

## TROUBLESHOOTING

## Hard to Shift

- Improper clutch adjustment: too much free play
- Shift forks bent
- Shift shaft bent
- Shift fork claw bent
- Shift drum cam grooves damaged
- Shift guide pin damaged

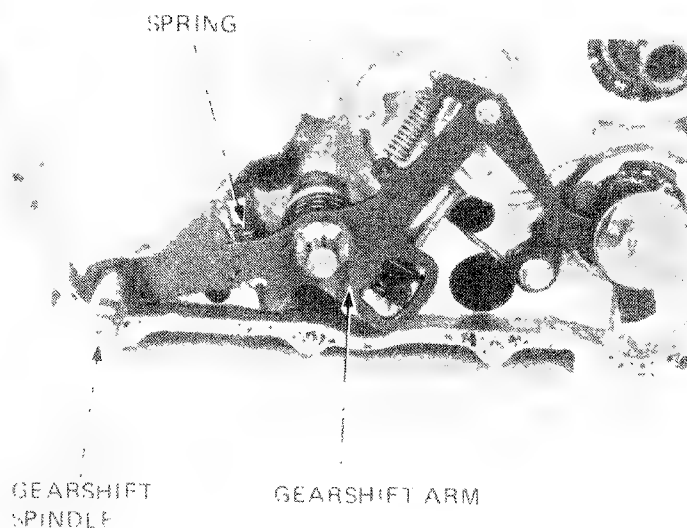
## Transmission Jumps Out of Gear

- Gear dogs worn
- Shift shaft bent
- Shift drum stopper broken
- Shift forks bent



## GEARSHIFT LINKAGE REMOVAL

Remove the engine (Page 5-2).  
Remove the engine front cover (Page 7-9).  
Remove the rear cover (Page 8-2).  
Remove the rear final shaft.  
Remove the gearshift spindle and shift spring  
from the gearshift arm.

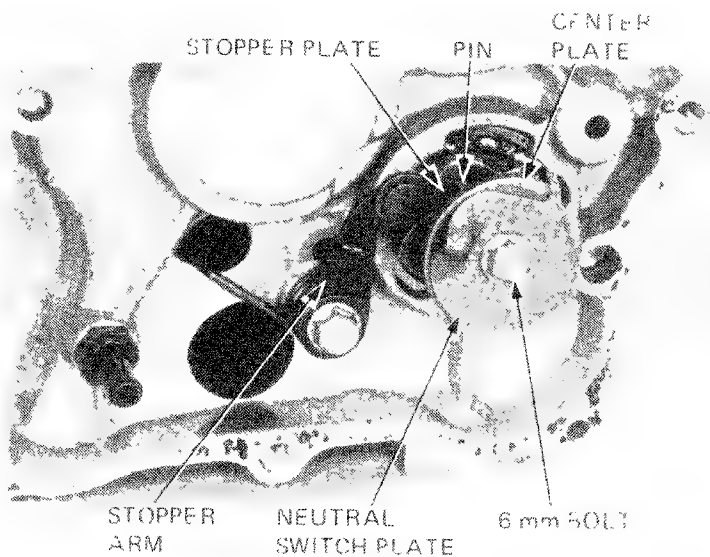


Remove the shift drum stopper bolt.  
Remove the shift drum stopper arm.  
Remove the neutral switch plate, shift drum stopper  
plate, gear shift drum pin, and collar.

### NOTE

Do not disassemble the shift drum plates and  
pin except when replacement is necessary.

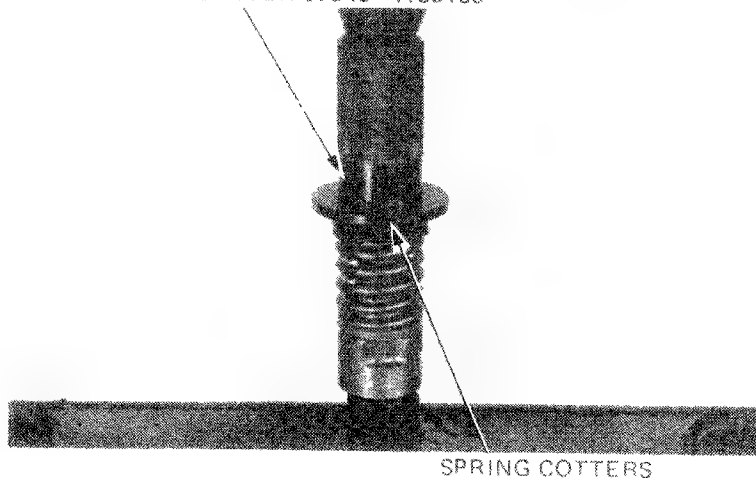
Check all removed parts for wear or damage.



## FINAL SHAFT DISASSEMBLY

Compress the spring with a press and CRANK CAP  
DRIVER and remove the spring cotters.  
Remove the spring retainer, damper lifter and cam  
from the shaft.

CRANK CAP DRIVER 07945-4150100

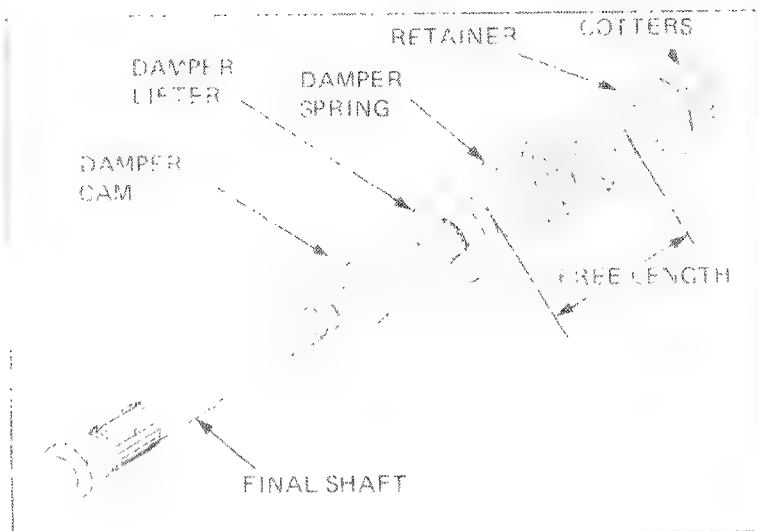






7. Measure the damper spring free length.  
**SERVICE LIMIT: 72.0 mm (2.83 in)**

Inspect the damper, lifter, shaft, and retainer for wear or damage.

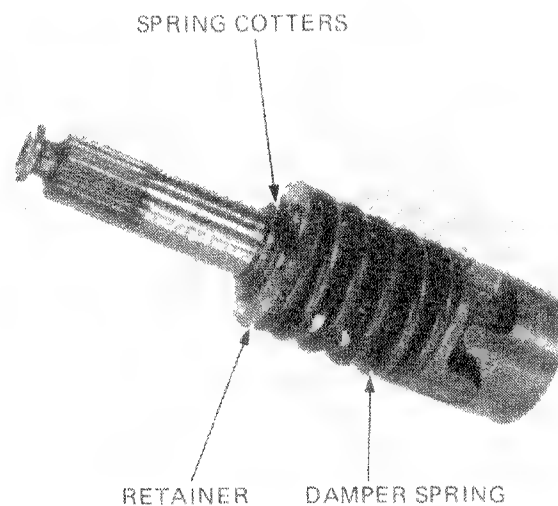


## FINAL SHAFT ASSEMBLY

Slide the lifter, spring and retainer over the shaft. Compress the spring in the CRANK CAP DRIVER and install the spring cotters.

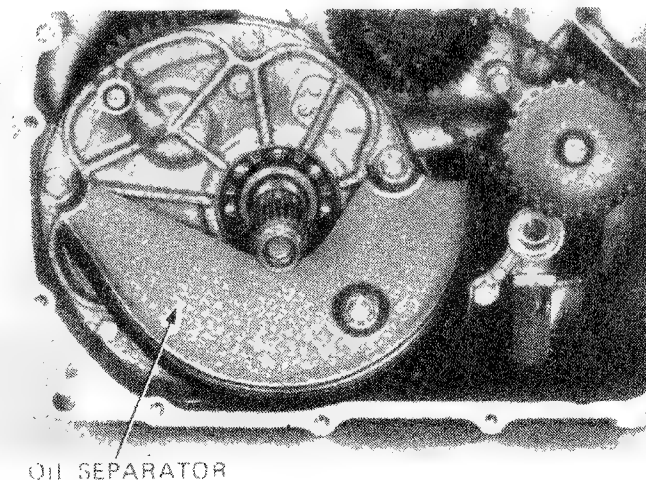
### NOTE

Make sure that the cotters are properly seated.



## TRANSMISSION DISASSEMBLY

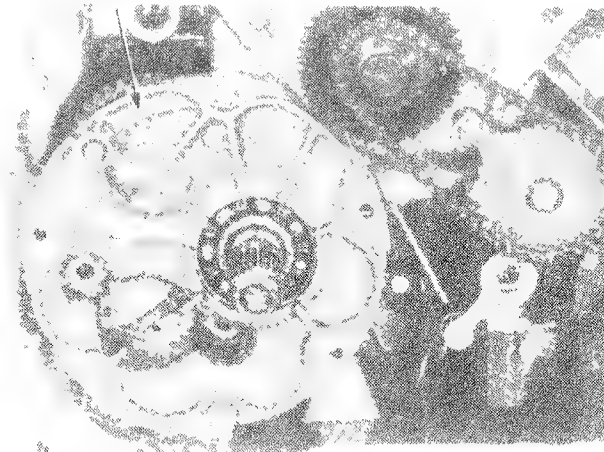
Remove the engine front cover and remove the clutch or an assembly (See section 7).  
 Remove the oil separator.





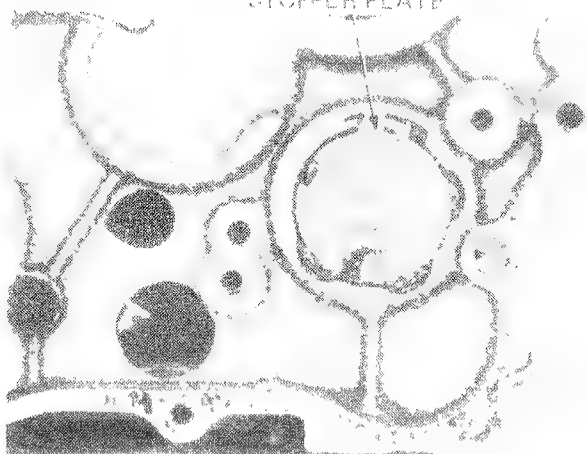
Remove the transmission holder bolt.

TRANSMISSION HOLDER

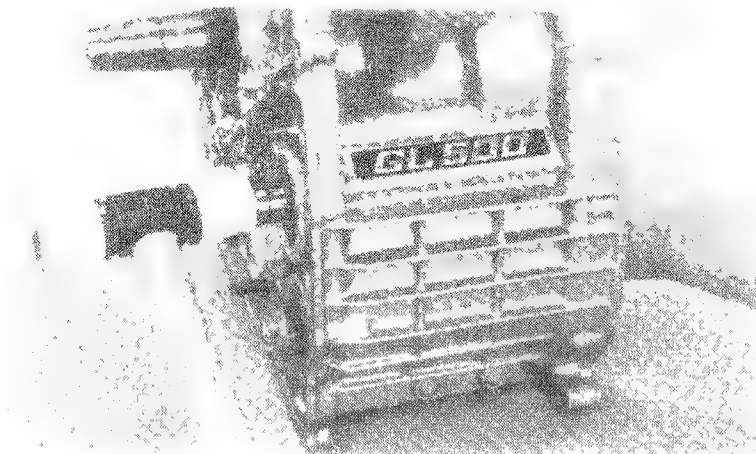


Align the section on the stopper plate with the center of the engine case 1, rotating the cover.

STOPPER PLATE

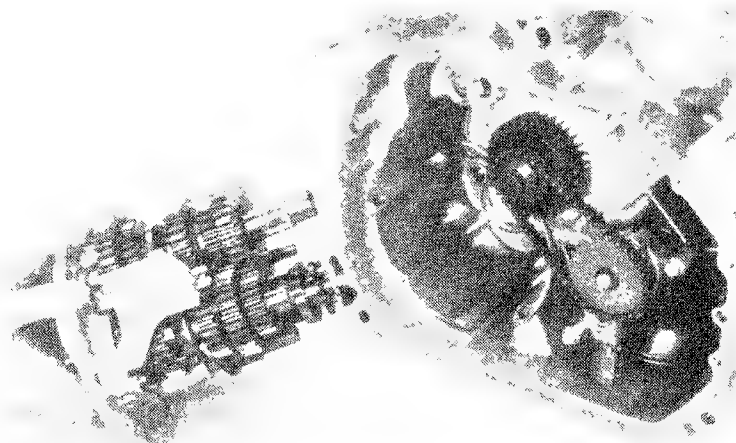


Remove the cover from the engine case 2, and place it on the workbench. The cover is now ready to be removed from the engine case.

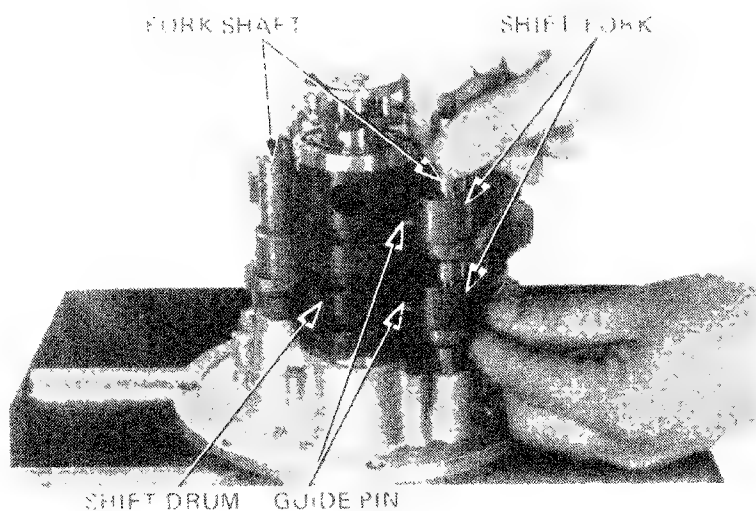




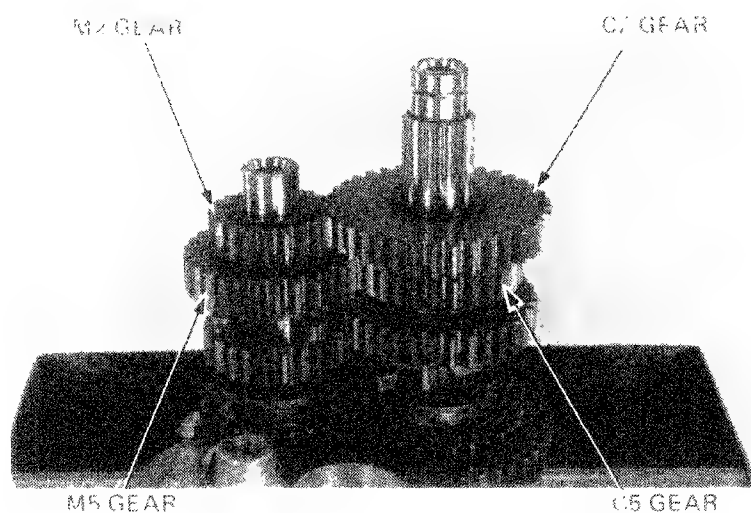
Remove the transmission assembly from the engine.



Remove the shift drum shafts, the shift forks and the guide pins from the shift drum.

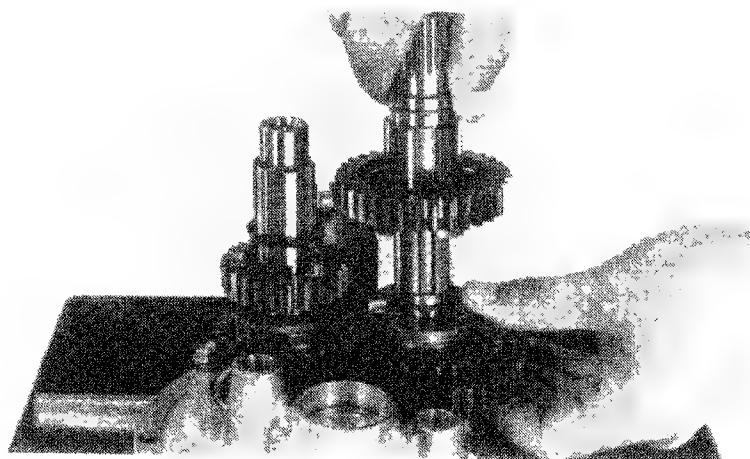


Remove the pinion gears from the countershaft assembly.

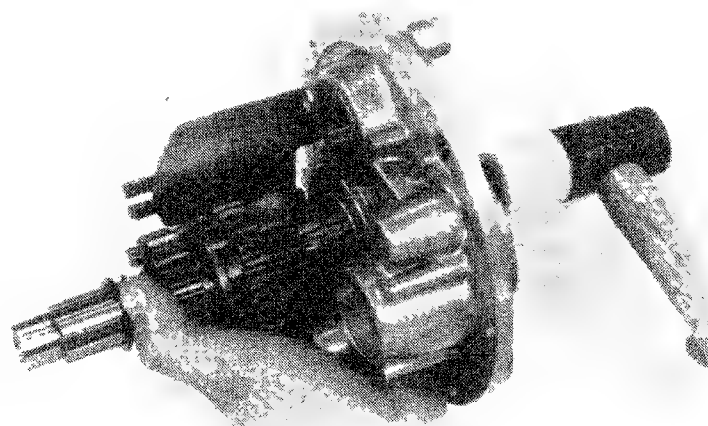




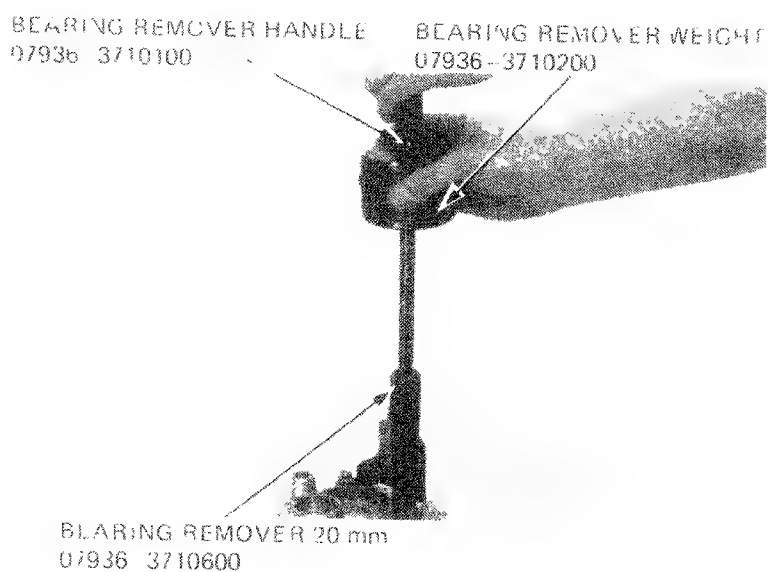
Reassemble the countershaft.



Remove the mainshaft, lightly tapping the end of it with a soft hammer.  
Remove the gears by prying off the snap ring.



Inspect each holder bearing for wear or damage. They should rotate smoothly and be free of play or rattle.  
Remove the bearings from the transmission holder.





**HONDA**  
GL500  
GL500 INTERSTATE

## TRANSMISSION

Remove the old countershaft bearings and install the new ones.

Install the new bearings. If the old bearings are replaced or removed from the transmission, the following steps must be followed:

1. Remove the old bearings.

2. Install the new bearings.

REMOVING REMOVER (20 mm)

20.16-32.0000

REMOVING REMOVER HANDLE

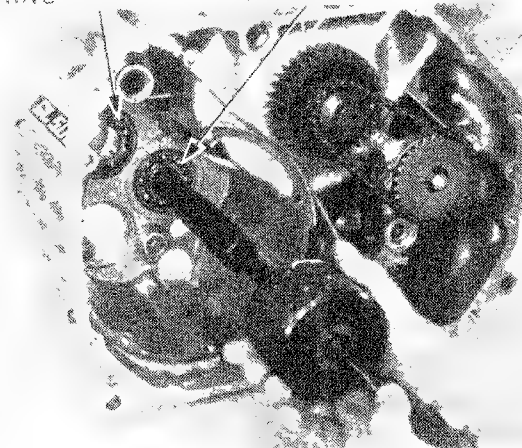
12.56-32.0000

REMOVING REMOVER WEIGHT

15.06-32.0000

COUNTERSHAFT  
BEARING

MAINSHAFT  
BEARING



## TRANSMISSION INSPECTION

Inspect the gear for freedom of movement and check for wear.

Inspect the gear teeth and slots for evidence of abnormal wear.

Measure each gear I.D. If any gear exceeds the service limits, the gear must be replaced.

### SERVICE LIMITS

M2, M3, M4

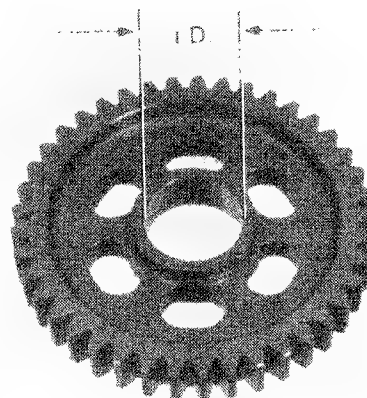
and M5 GEARS 25.10 mm (0.988 in)

C1 GEAR 24.10 mm (0.949 in)

C2 GEAR 27.60 mm (1.087 in)

C3 and C4 GEARS 25.10 mm (0.988 in)

C5 GEAR 32.10 mm (1.264 in)

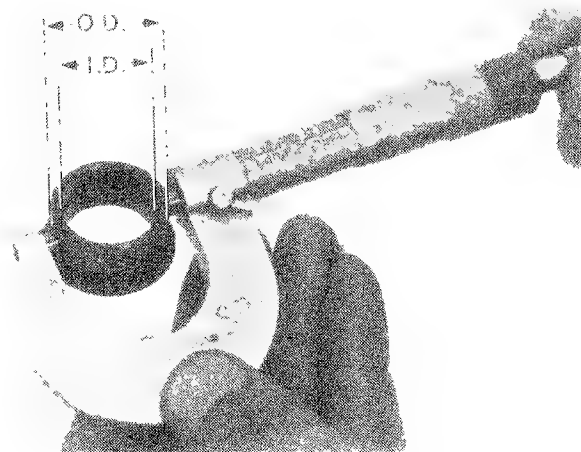


Measure the countershaft low gear (C5) and the mainshaft low gear (C1) for I.D. and O.D.

### SERVICE LIMITS

O.D. 23.95 mm (0.943 in)

I.D. 20.06 mm (0.790 in)





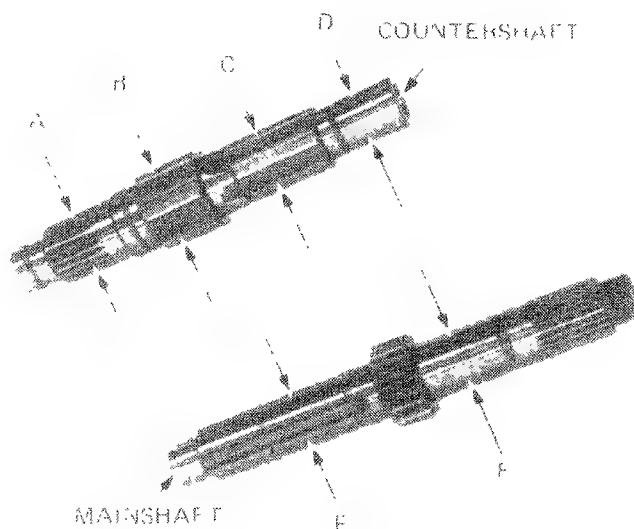
Measure and record the O.D. of the mainshaft and countershaft at the location shown.

**SERVICE LIMITS:**

- A : 27.43 mm (1.080 in)
- B : 31.91 mm (1.256 in)
- C : 24.93 mm (0.982 in)
- D : 19.96 mm (0.786 in)
- E : 24.91 mm (0.781 in)
- F : 24.91 mm (0.781 in)

Measure the clearance between the gear and gear shaft bushings.

**SERVICE LIMIT: 0.15 mm (0.0059 in)**



Measure the shift fork O.D. and claw thickness.

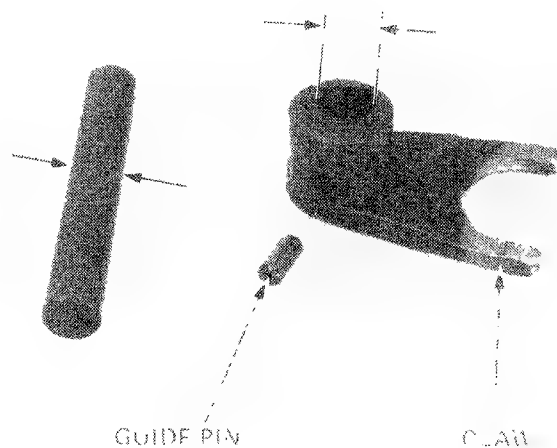
**SERVICE LIMIT: 13.05 mm (0.514 in)**

Measure the shift fork shaft O.D.

**SERVICE LIMIT: 12.95 mm (0.510 in)**

Measure the shift fork claw thickness.

**SERVICE LIMIT: 5.50 mm (0.217 in)**



Measure the transmission holder I.D.

**SERVICE LIMIT: 35.06 mm (1.380 in)**

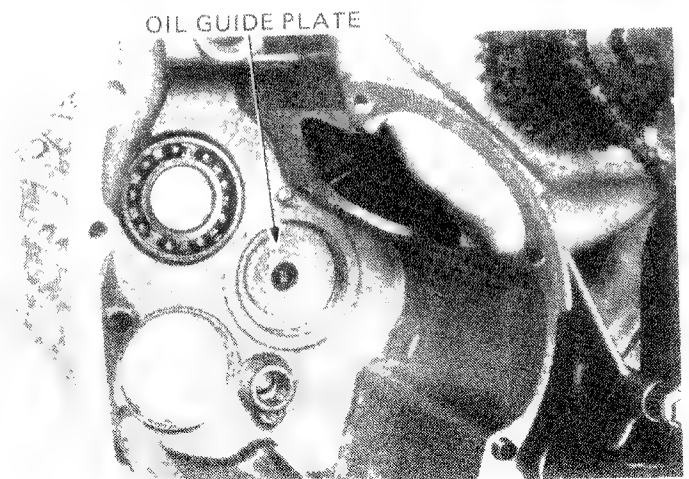
Inspect the roller bearings for wear or damage. Replace the roller bearings by hand. Bearings must be replaced if they are noisy or have excessive play.





## TRANSMISSION ASSEMBLY

Install the oil guide plate in the mainshaft bearing hole.



DRIVER 07942 3710000 (Mainshaft)  
07749 0010000 (Countershaft)

Install the mainshaft and countershaft bearings into the case.

### TOOLS

#### MAINSHAFT BEARING

- Attachment 42 x 47 mm
- Driver

#### COUNTERSHAFT BEARING

- 52 x 65 mm
- Pilot 25 mm
- Driver



ATTACHMENT

When the transmission holder bearing

is used,

Support the transmission holder above the workbench to prevent damaging it.

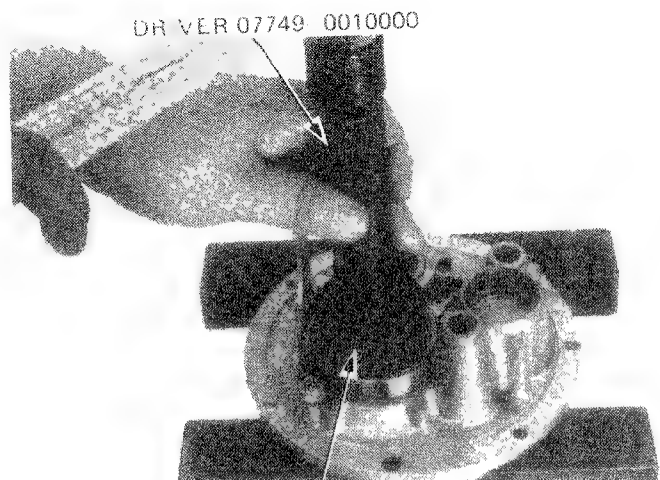
### TOOLS

#### MAINSHAFT BEARING

- Attachment 62 x 68 mm
- Pilot 25 mm
- Driver

#### COUNTERSHAFT BEARING

- Attachment 32 x 35 mm
- Pilot 20 mm
- Driver



ATTACHMENT AND PILOT

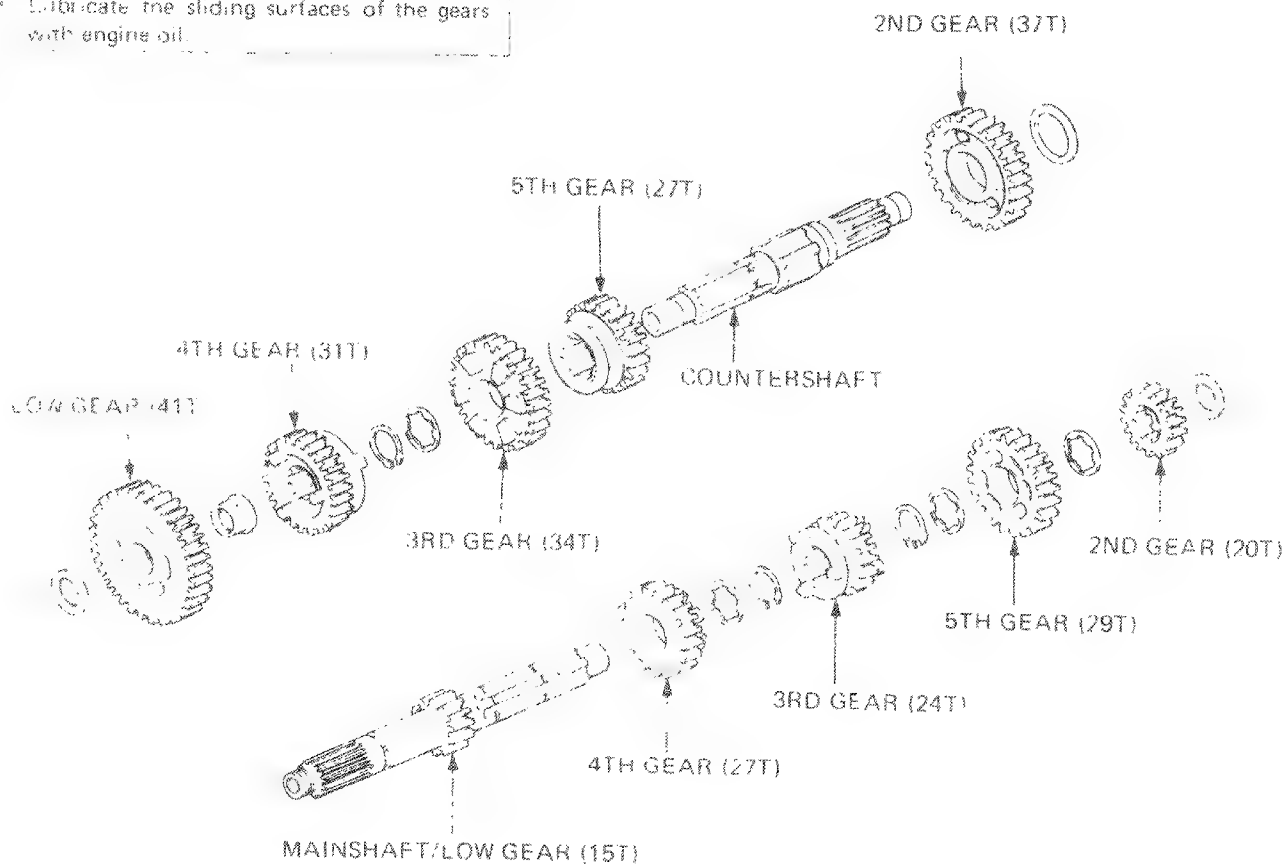




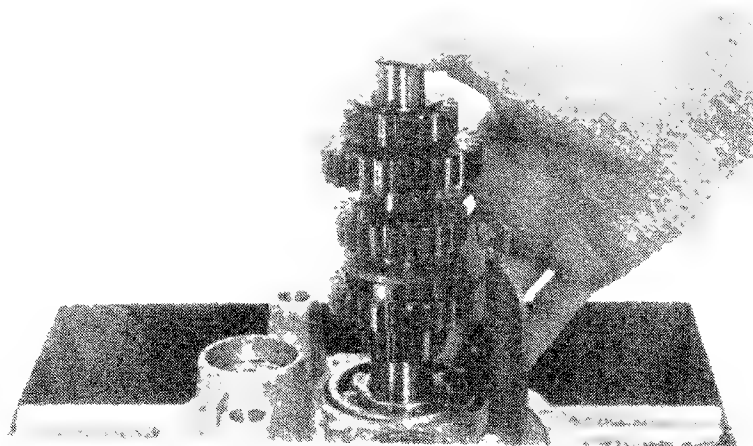
Assemble the mainshaft and countershaft.

**NOTE**

- Check the gears for freedom of movement or rotation.
- Check that all circlips are seated in their grooves.
- Lubricate the sliding surfaces of the gears with engine oil.



Insert the mainshaft assembly into the holder bearing so that it seats tightly.



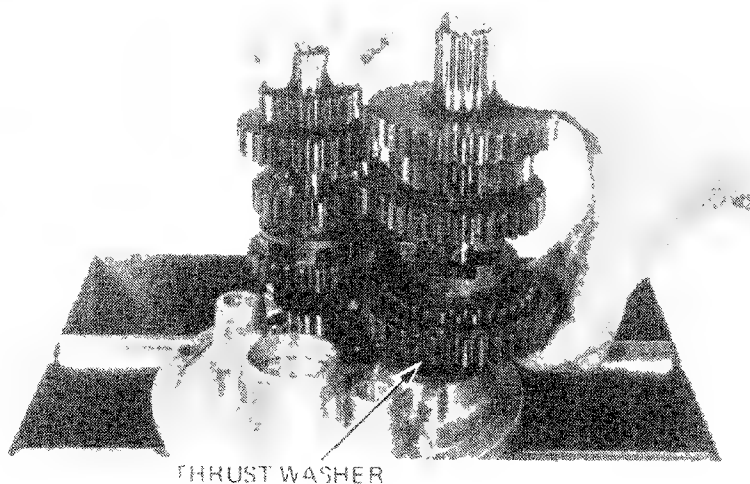


Install the countershaft assembly into the bearing holder.

Check the engagement of the gears on the countershaft and shift fork.

Note:

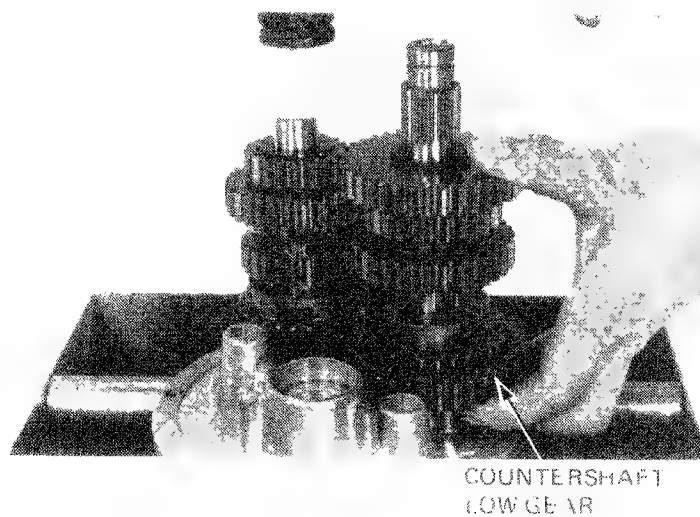
During installation, hold the thrust washer to prevent it from falling.



Press the gear assembly into position by lightly tapping the countershaft with a soft hammer.

Note:

Shift the countershaft low gear to prevent it from coming off.

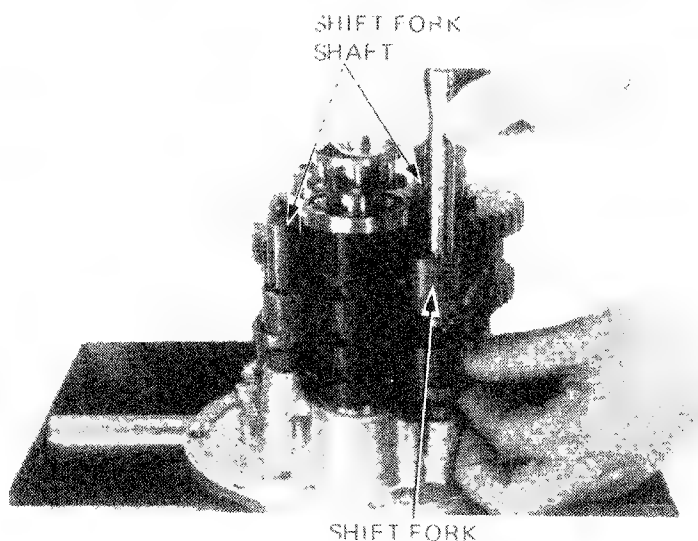


Install the shift drum.

Insert a pin into each shift fork.

Engage the shift forks with the gears and shift drum grooves.

Install the shift fork shafts.

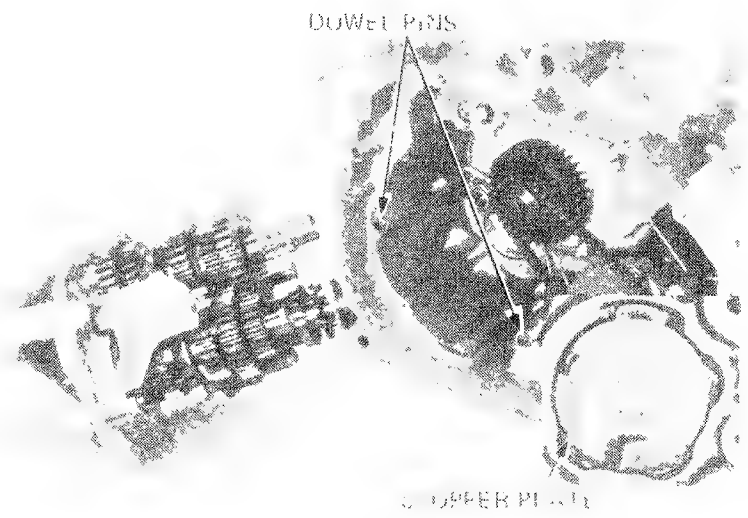




1. Remove the cover plate from the transmission housing.

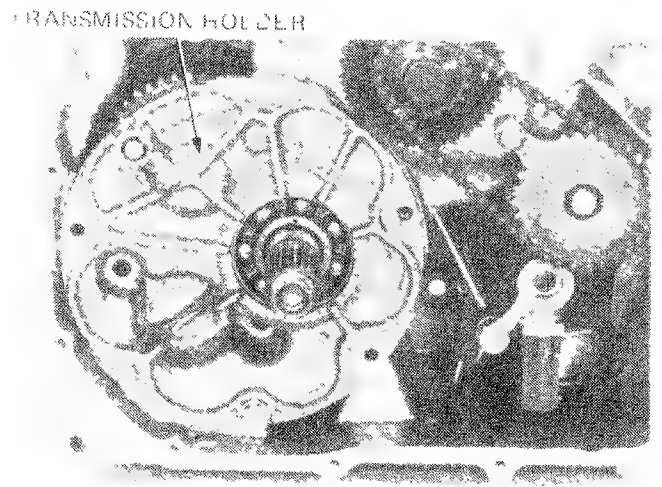
2. Remove the dowel pins from the transmission housing.

3. Remove the copper plate from the transmission housing.



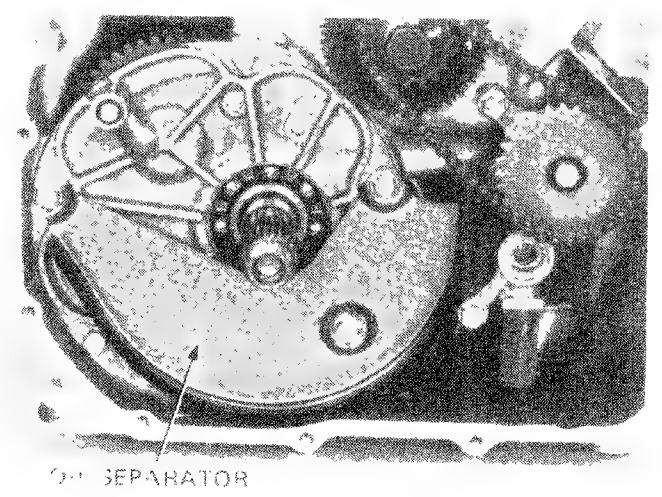
4. Remove the transmission holder from the transmission housing.

5. Remove the oil separator from the transmission housing.



6. Remove the oil separator from the transmission housing.

7. Remove the oil separator from the transmission housing.





## GEARSHIFT LINKAGE INSTALLATION

Install the shift drum cam plate, pin, collar, center plate, and point plate.

Install the gearshift arm.

Install the spring on the shift arm and shift spindle.

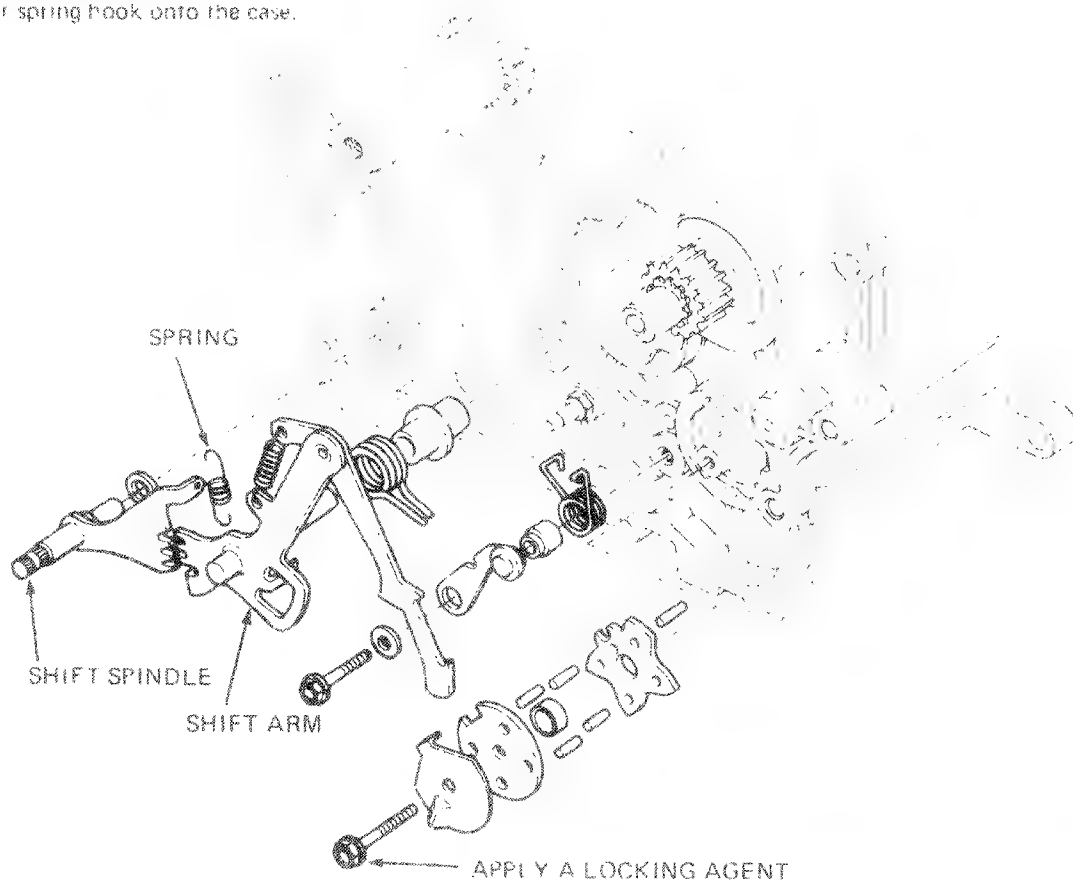
Install the spindle.

Rotate the shift drum to neutral.

Install the drum stopper cam plate.

Apply a locking agent and tighten the 6 mm bolt.

Attach the stopper spring hook onto the case.

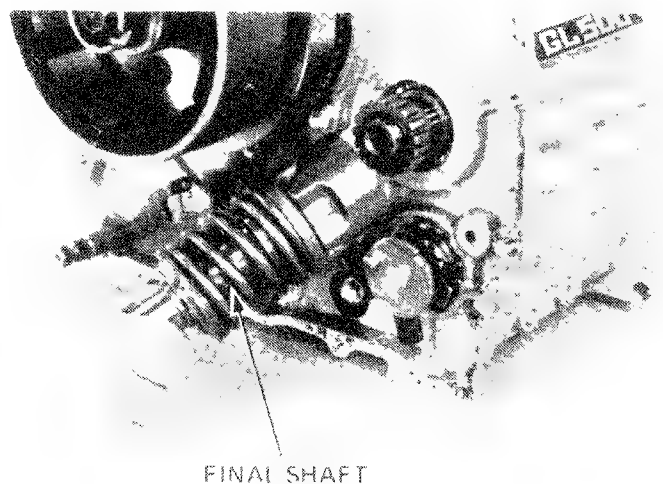


Install the final shaft.

Install the rear cover. (See section 9)

### NOTE

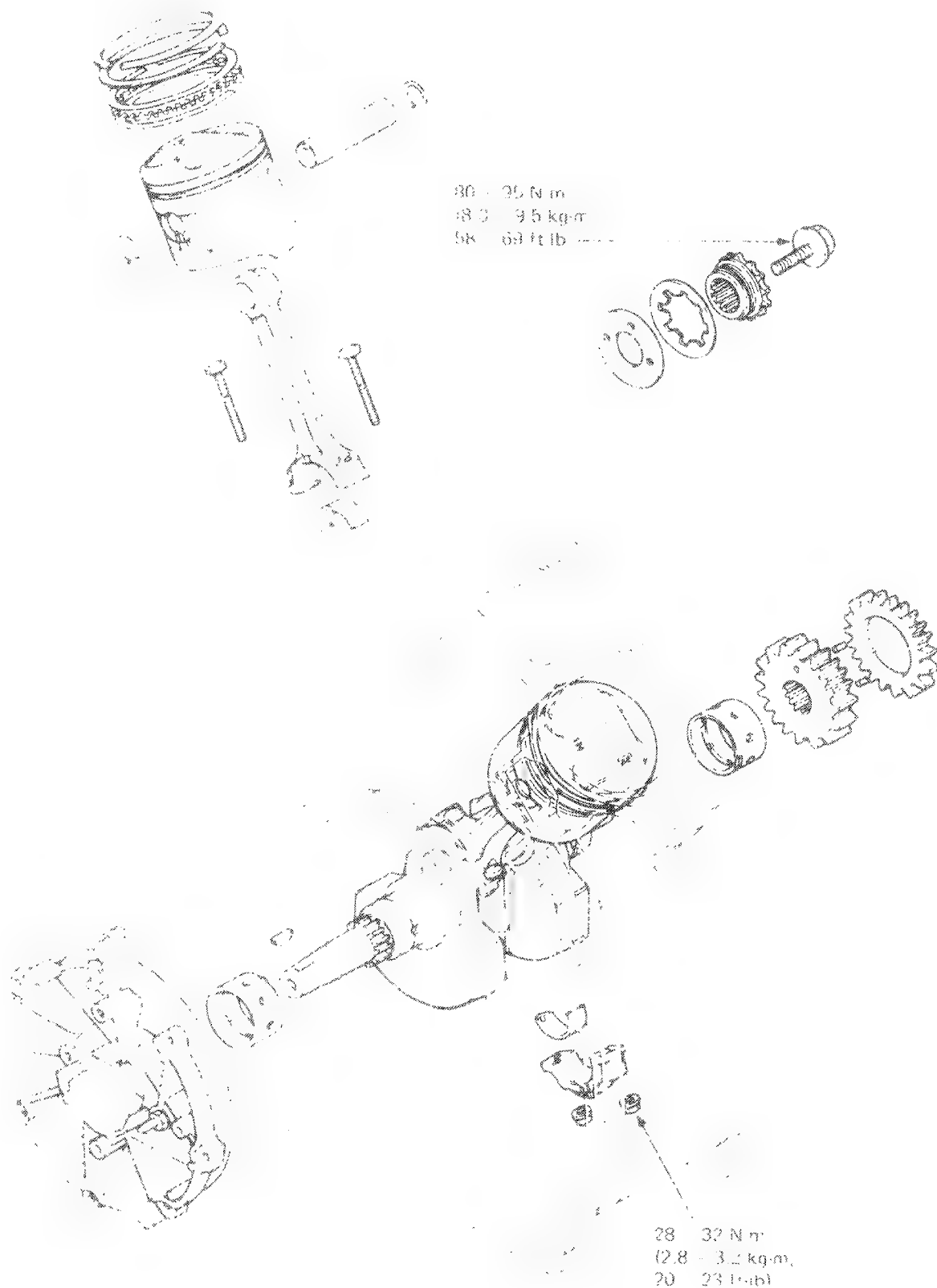
After installing the rear cover, install the gearshift pedal and check its operation.





**HONDA**  
GL500  
GL500 INTERSTAIL

MEMO





**HONDA**  
GL500  
GL500 INTERSTATE

# 12. CRANKSHAFT/PISTON

|                        |      |                                  |       |
|------------------------|------|----------------------------------|-------|
| SERVICE INFORMATION    | 12-1 | BEARING INSPECTION/SELECTION     | 12-8  |
| TROUBLESHOOTING        | 12-2 | MAIN JOURNAL BEARING REPLACEMENT | 12-11 |
| CONNECTING ROD REMOVAL | 12-3 | CRANKSHAFT INSTALLATION          | 12-14 |
| PISTON REMOVAL         | 12-4 | PISTON INSTALLATION              | 12-16 |
| CYLINDER INSPECTION    | 12-5 | CONNECTING ROD INSTALLATION      | 12-17 |
| CRANKSHAFT REMOVAL     | 12-6 |                                  |       |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- Crankshaft inserts are a select fit and are identified by color codes. Select replacement bearing from the color code table.
- When installing new bearings, recheck them with plastigauge.
- Before removing the piston and connecting rod assemblies, clean the top of the cylinder of carbon deposits.
- Crankshaft/piston can be serviced by removing the oil pump and transmission cover. To service the left piston, it's necessary to remove the transmission.
- Apply a thin coat of clean, dry grease to the journals, crank pin and bearings during assembly.

### COILS

|                            |               |
|----------------------------|---------------|
| Coil spring                | 07924-4150000 |
| Coil spring plate          | 07941-4150000 |
| Coil spring plate          | 07935-4150000 |
| Coil spring plate          | 07945-4150100 |
| Coil spring plate assembly | 07973-4150000 |

### CRANK PIN

|           |                                                  |
|-----------|--------------------------------------------------|
| Crank pin | 07755-0010000 (commercially available in U.S.A.) |
|-----------|--------------------------------------------------|

### SPECIFICATIONS

|                              |                               | mm (in)                       |                             |
|------------------------------|-------------------------------|-------------------------------|-----------------------------|
| Item                         |                               | Standard                      | Service Limit               |
| Crankshaft                   | Main journal clearance        | 0.020-0.060 (0.0008-0.0023)   | 0.085 (0.0033)              |
|                              | Crankpin clearance            | 0.020-0.044 (0.0008-0.0017)   | 0.080 (0.0031)              |
|                              | Connecting rod side clearance | 0.150-0.170 (0.0059-0.0067)   | 0.350 (0.0138)              |
| Cylinder                     | ID                            | 78.000-78.015 (3.0709-3.0715) | 78.100 (3.0748)             |
|                              | Wall page                     |                               | 0.10 (0.004)                |
| Piston                       | Ring to groove clearance      | Top                           | 0.015-0.050 (0.0006-0.0020) |
|                              |                               | Second                        | 0.015-0.050 (0.0006-0.0020) |
|                              | Ring end gap                  | Top                           | 0.10-0.25 (0.004-0.010)     |
|                              |                               | Second                        | 0.10-0.25 (0.004-0.010)     |
|                              |                               | Oil (side rail)               | 0.20-0.40 (0.008-0.016)     |
|                              |                               |                               | 1.0 (0.04)                  |
| Piston                       | Piston ID                     | 77.940-77.960 (3.0685-3.0693) | 77.860 (3.0653)             |
|                              | Piston pin bore               | 21.002-21.008 (0.8268-0.8271) | 21.040 (0.8283)             |
|                              | Piston pin ID                 | 20.994-21.000 (0.8265-0.8268) | 20.984 (0.8261)             |
|                              | Small end ID                  | 21.020-21.041 (0.8276-0.8284) | 21.068 (0.8294)             |
| Piston to cylinder clearance |                               |                               | 0.10 (0.004)                |



**TORQUE VALUES**

|                         |                                       |
|-------------------------|---------------------------------------|
| Crankshaft cap bolt     | 20-24 N·m (2.0-2.4 kg-m, 14-17 ft-lb) |
| Connecting rod cap nut  | 28-32 N·m (2.8-3.2 kg-m, 20-23 ft-lb) |
| Primary drive gear bolt | 80-95 N·m (8.0-9.5 kg-m, 58-69 ft-lb) |

**TROUBLESHOOTING****Excessive Noise**

1. Crankshaft
  - a. Main bearing
  - b. Vibration bearing
2. Connecting Rod
  - a. Piston or cylinder
  - b. Piston pin or pin hole
  - c. Rod small end

**Low Compression or Uneven Compression**

1. Worn cylinder or piston ring

**Excessive Smoke**

1. Worn cylinder, piston or piston rings
2. Improperly installed piston rings
3. Damaged piston or cylinder

**Overheating**

1. Excessive carbon build up on piston head
2. Stopped or restricted flow of coolant
  - a. Sticking thermostat

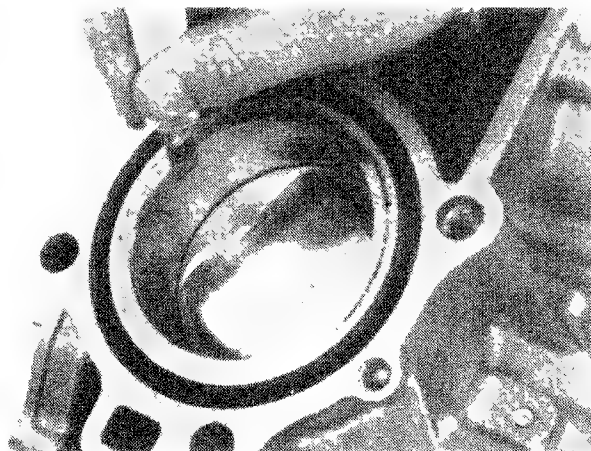
**Knocking or Abnormal Noise**

1. Worn pistons and cylinders
2. Excessive carbon build up on piston head



## CONNECTING ROD REMOVAL

Remove the cylinder head (Page 6-3).  
Remove the oil pump (Page 7-9).  
Remove the transmission (Page 11-4).  
Scrape all deposits from the top of the cylinder



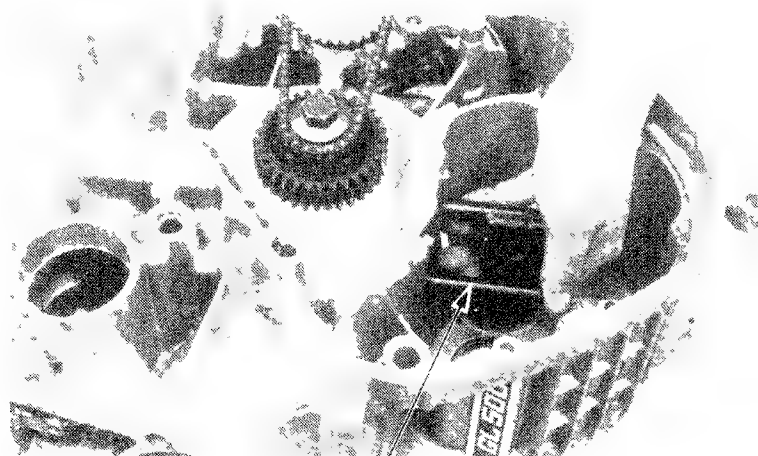
Turn the crankshaft so that the piston to be removed is at B.D.C. (Bottom Dead Center).  
Remove the bearing cap.  
Mark the bearing caps and rods to indicate cylinder position.  
Remove the left side cap from the transmission case. Work through the hole on the oil pump side to remove the right side cap.

CONNECTING ROD BEARING CAP



BEARING CAP NUTS

Turn the crankshaft so that the piston is at T.D.C.  
Place the PISTON REMOVER over the rod bolts, and push the piston and rod assembly out.



PISTON REMOVER



## CRANKSHAFT/PISTON

### PISTON REMOVAL

Remove the piston pin clips.  
Remove the pin.

#### NOTE

Mark the pins to indicate the piston position.



### PISTON INSPECTION

Measure the ring to groove clearance.

#### SERVICE LIMIT:

(TOP/SECOND) - 0.10 mm (0.004 in)

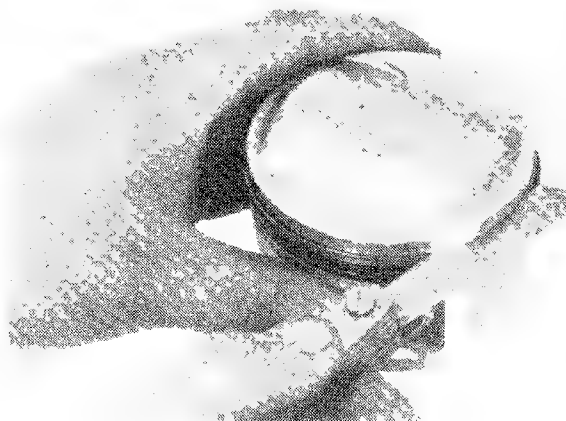
Remove the piston rings.

#### NOTE

Mark the rings so they can be assembled in their original position.

Clean and inspect the piston crown.

Inspect the piston for damage and cracks, check the ring grooves for excessive wear.



Insert each piston ring into the cylinder and measure the ring end gap.

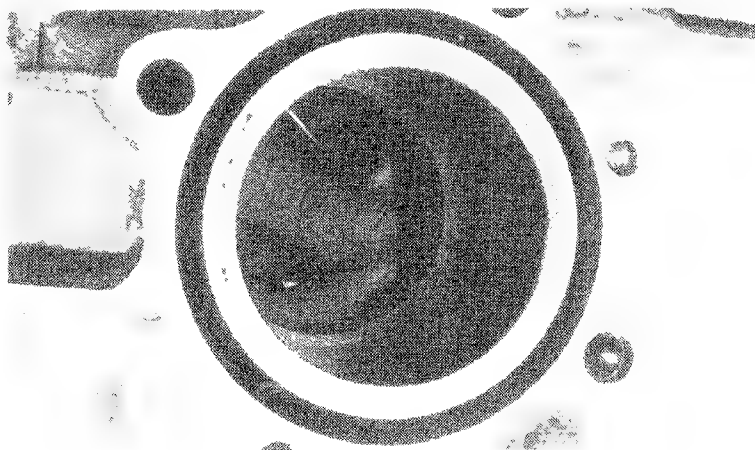
#### SERVICE LIMIT:

TOP/SECOND : 0.60 mm (0.024 in)

OIL (SIDE RAIL) : 1.0 mm (0.04 in)

#### NOTE

To measure the gap, use a piston and push the ring squarely into the cylinder.





Measure the piston diameter at the skirt.  
SERVICE LIMIT: 77.86 mm (3.0653 in)

Measure the wear second time in the opposite direction.

NOTE:

- 1. Measure the piston diameter 2-12 mm (0.0787-0.4724 in) from the bottom of the skirt.
- 2. Measure the piston pin bore.

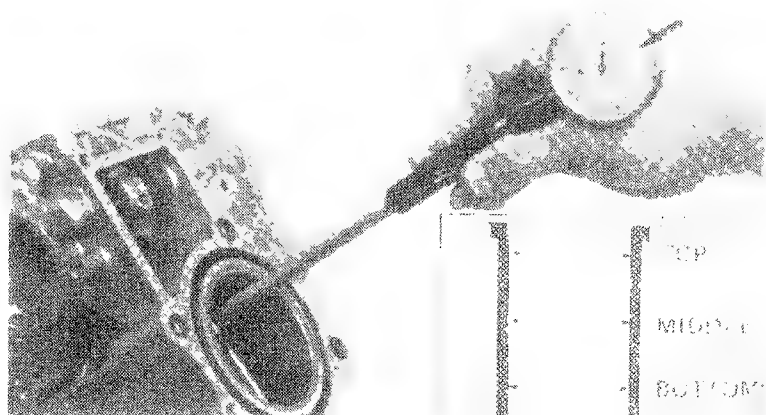


## CYLINDER INSPECTION

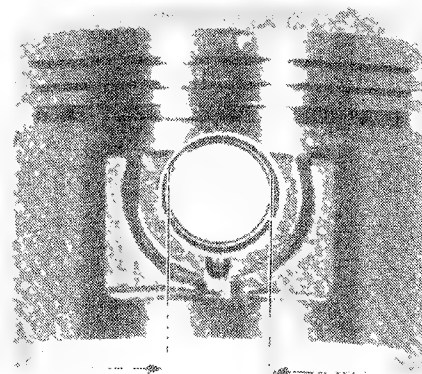
Measure the cylinder I.D.  
SERVICE LIMIT: 78.100 mm (3.0748 in)

Measure the piston to cylinder clearance.  
SERVICE LIMIT: 0.10 mm (0.004 in)

Four size pistons are available in the following sizes (in inches):



Measure the piston pin bore.  
SERVICE LIMIT: 21.040 mm (0.8283 in)



## CRANKSHAFT/PISTON



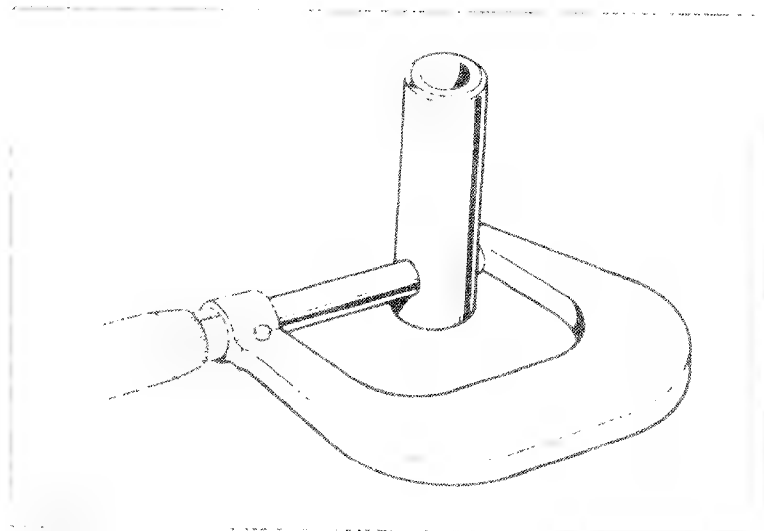
**HONDA**  
GL500  
GL500 INTERSTATE

Measure the piston pin O.D.

SERVICE LIMIT: 20.984 mm (0.8261 in)

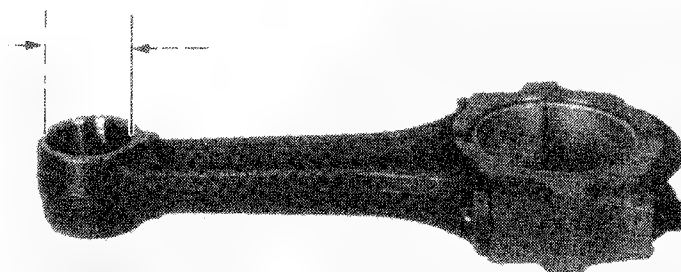
Measure the piston pin to piston clearance.

SERVICE LIMIT: 0.05 mm (0.002 in)



Measure the rod end I.D. If the reading exceeds the service limit, replace the rod.

SERVICE LIMIT: 21.068 mm (0.8294 in)



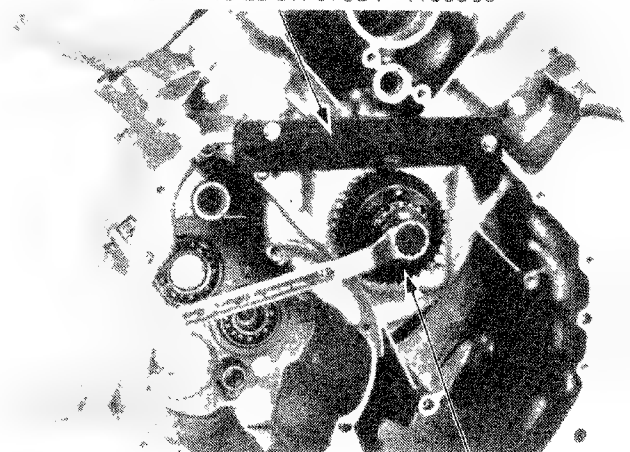
## CRANKSHAFT REMOVAL

Hold the primary drive gear with a GEAR HOLDER. Remove the 12 mm bolt and the oil pump sprocket, and remove the side plate, sub gear and primary gear.

Note:

Mark the sub gear and side plate so that they will face the correct direction during re-assembly.

GEAR HOLDER 07924--4150000



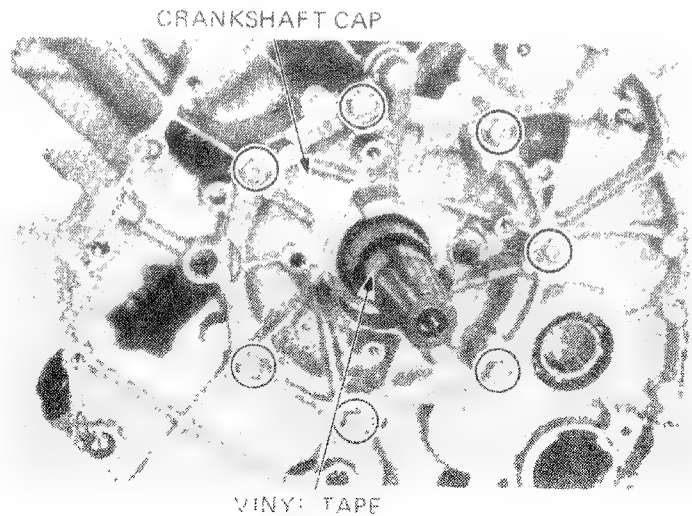
PRIMARY DRIVE GEAR



Remove the flywheel and cam chain (Page 10-2).  
Remove the crankshaft cap bolts.

**NOTE**

Before removing the crankshaft, wrap the splines of the primary gear and timing sprocket with vinyl tape to prevent damage to them.

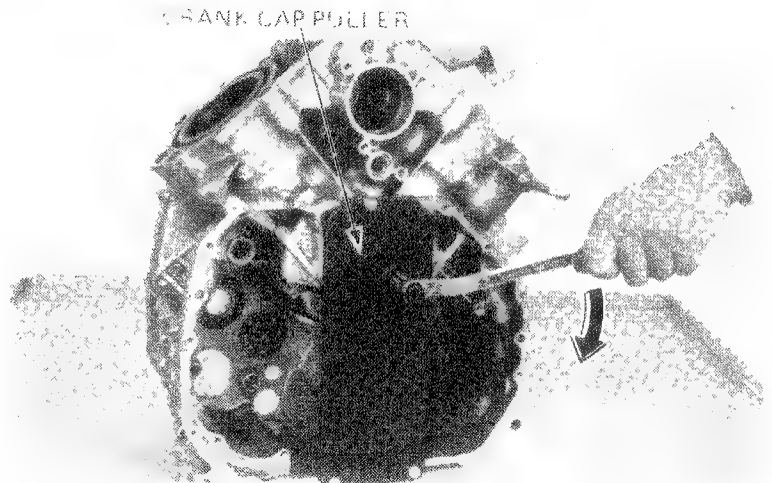


Insert the CRANK CAP PULLER in the front of the engine.

Press the crankshaft out by screwing in the CRANK CAP PULLER, or use a press to remove the crankshaft.

**WARNING**

Do not damage the bearing when removing the crankshaft.



**ROD SIDE CLEARANCE INSPECTION**

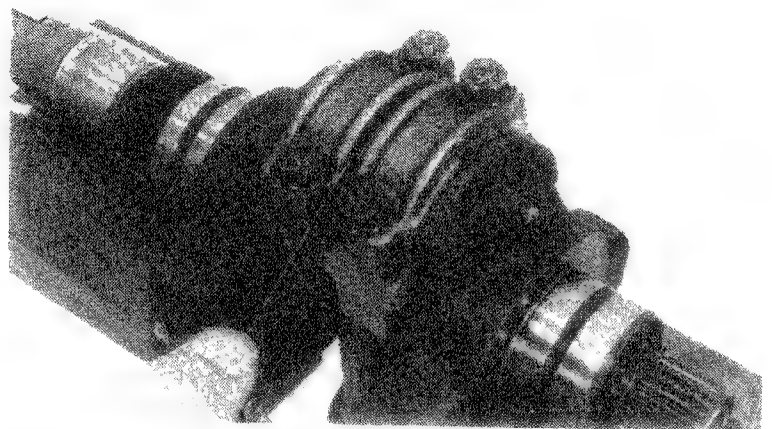
Insert each connecting rod and bearing cap in its original position and torque to specifications.

**TORQUE** 28–32 N·m (2.8–3.2 kg m,  
20–23 ft lb)

**NOTE**

- Torque the cap bolts evenly in 2–3 steps.
- Do not rotate the crankshaft during inspection.

Measure the rod side clearance with a feeler gauge.  
**SERVICE LIMIT: 0.35 mm (0.0138 in)**





## BEARING INSPECTION/SELECTION

### CRANK PIN

1. Use a feeler gauge to check for separation between the bearing cap and inserts.

2. Use a feeler gauge to check the inserts in each rod cap. Adjust the gap by filing across each rod/crankpin, making the oil line.

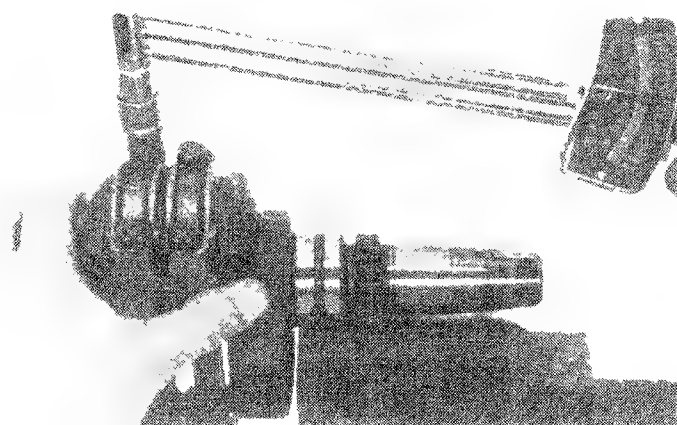


3. Use a feeler gauge to check the oil line bearing cap and inserts. Adjust the oil line and torque to specifications.

NOTE:

1. Do not file the oil line evenly in 2-3 steps.

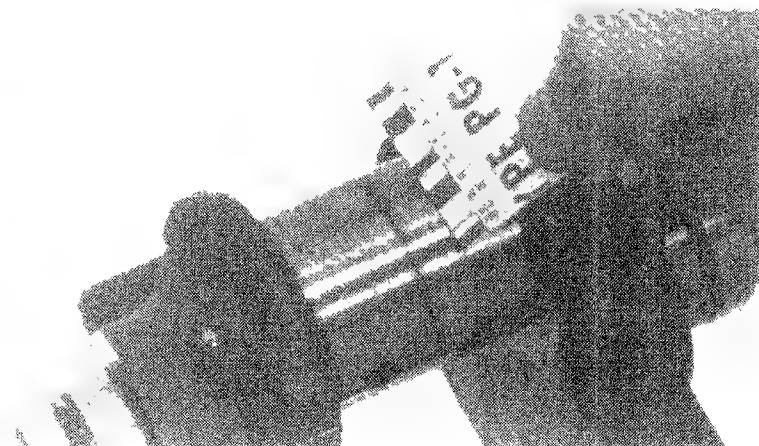
2. Do not install the crankshaft during the inspection.



4. Use a feeler gauge to check the oil line bearing cap and inserts. Adjust the gap by filing across each rod/crankpin, making the oil line.

SERVICE LIMIT: 0.08 mm (0.003 in)

5. The oil line thickness determines the oil line.







**HONDA**

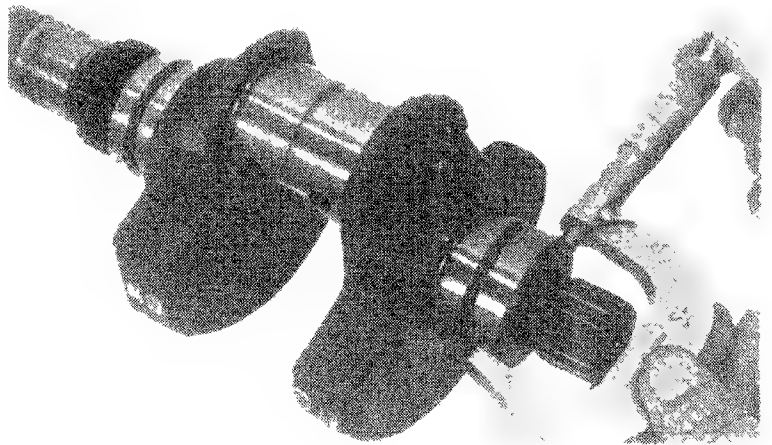
GL500

GL500 INTERSTATE

## CRANKSHAFT/PISTON

### MAIN JOURNAL

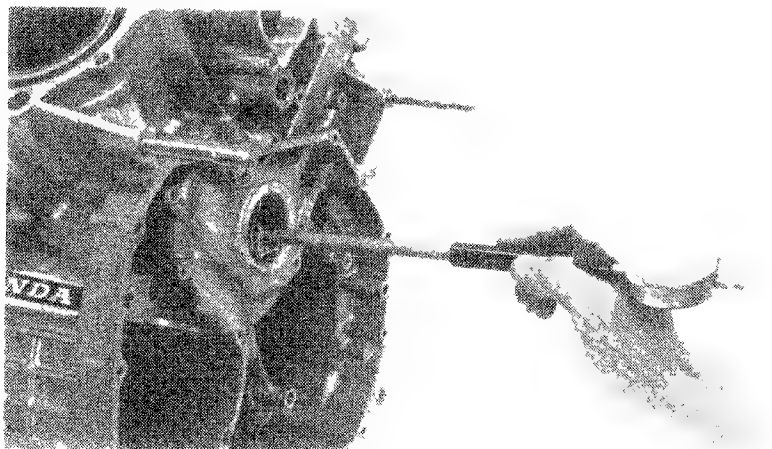
#### Main Journal (Fig. 12-9)



Measure the engine case and crankshaft bearing cap ID.

Subtract the journal to bearing cap clearance.

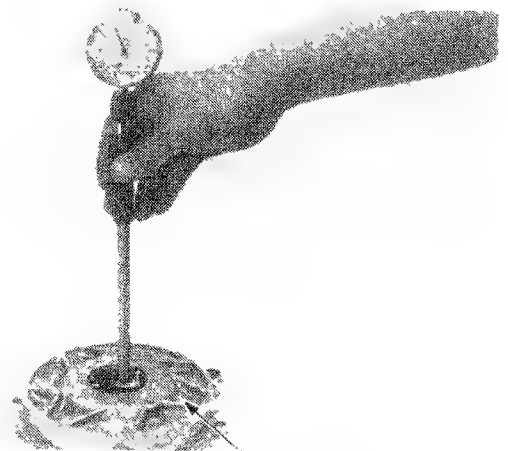
**SERVICE LIMIT: 0.085 mm (0.0033 in)**



Measure the crankshaft bearing cap ID.

Subtract the journal to bearing cap clearance.

If the bearing clearance is beyond tolerance, select replacement bearings (Page 12-10).

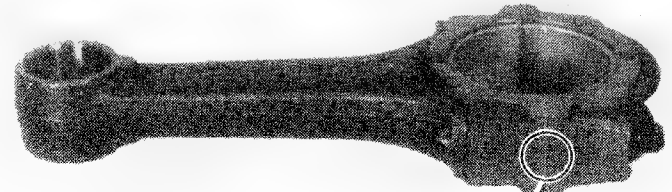


BEARING CAP



## ROD BEARING SELECTION

Determine and record each connecting rod I.D. code number.



CODE NO.

Determine and record the corresponding crankpin (I.D.) code letters.  
Cross-reference the crank pin and rod codes to determine the replacement bearing color.

### ROD BEARING SELECTION

| CRANKPIN SIZE CODE | A          | B          | C          |
|--------------------|------------|------------|------------|
| 39.342 I.D.        | 39.984     | 39.976     | 39.984     |
| 39.342 I.D.        | 39.984 mm  | 39.976 mm  | 39.984 mm  |
| 1.574 I.D.         | 1.5742     | 1.5739     | 1.5739     |
| 1.574 I.D.         | 1.5742 in. | 1.5742 in. | 1.5742 in. |

CRANKPIN SIZE CODE  
NUMBER

### COLOR IDENTIFICATION

| CRANKPIN SIZE CODE | A      | B      | C     |
|--------------------|--------|--------|-------|
| 43.000 I.D.        | PINK   | YELLOW | GREEN |
| 43.008 I.D.        |        |        |       |
| 43.010 I.D.        | YELLOW | GREEN  | BROWN |
| 43.012 I.D.        |        |        |       |
| 43.014 I.D.        |        |        |       |
| 43.016 I.D.        |        |        |       |
| 43.018 I.D.        | GREEN  | BROWN  | BLACK |
| 43.020 I.D.        |        |        |       |
| 43.022 I.D.        |        |        |       |
| 43.024 I.D.        |        |        |       |
| 43.026 I.D.        |        |        |       |
| 43.028 I.D.        |        |        |       |
| 43.030 I.D.        |        |        |       |
| 43.032 I.D.        |        |        |       |
| 43.034 I.D.        |        |        |       |
| 43.036 I.D.        |        |        |       |
| 43.038 I.D.        |        |        |       |
| 43.040 I.D.        |        |        |       |
| 43.042 I.D.        |        |        |       |
| 43.044 I.D.        |        |        |       |
| 43.046 I.D.        |        |        |       |
| 43.048 I.D.        |        |        |       |
| 43.050 I.D.        |        |        |       |
| 43.052 I.D.        |        |        |       |
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| 43.066 I.D.        |        |        |       |
| 43.068 I.D.        |        |        |       |
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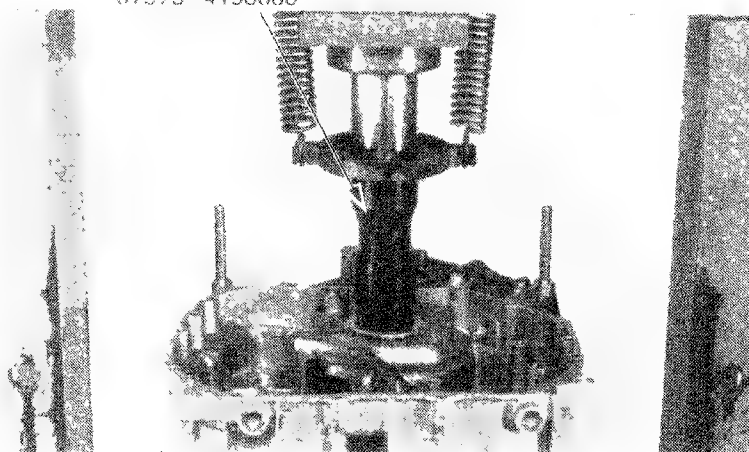
## MAIN JOURNAL BEARING REPLACEMENT REMOVAL

Press the bearing out with a hydraulic press and bearing disassembly tool.

### CAUTION

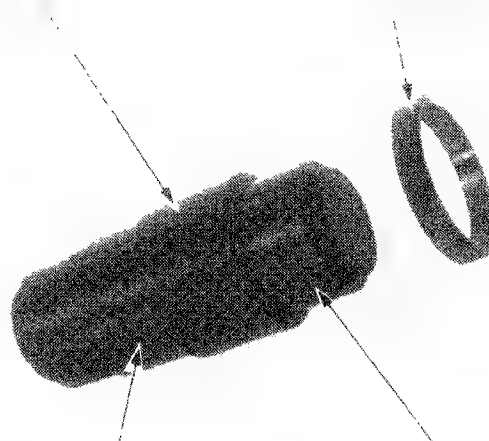
To prevent engine case damage, always use a hydraulic press and bearing removal tool to remove bearings.

MAIN BEARING DIS. ASSEMBLY TOOL  
07973-4150000



TOOL  
07973-4150000  
(Stamper "R")

ATTACHMENT  
(Part of 07973-4150000) (Stamper "P")  
TO PRESS CRANK CAP BEARINGS



TO REMOVE CRANK CAP  
AND CRANKCASE BEARING

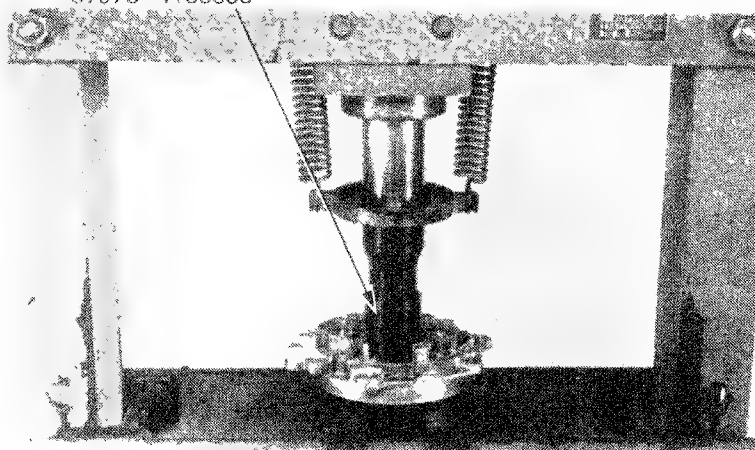
TO PRESS MAIN  
JOURNAL BEARINGS

Press the bearings out of the crankshaft cap bearing support with a hydraulic press and bearing removal tool.

### CAUTION

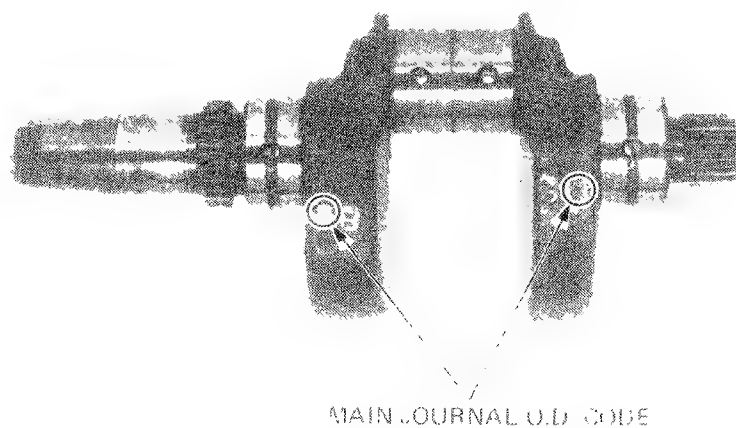
To prevent crankshaft cap damage, always use a hydraulic press and bearing removal tool to remove bearings.

MAIN BEARING DIS. ASSEMBLY TOOL  
07973-4150000

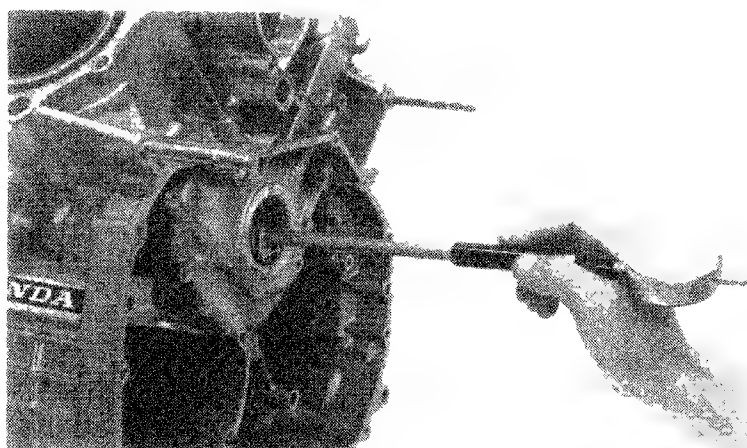


# 1. Measure

1. Measure the crank main journal O.D. code



2. Measure the cylinder bore bearing support I.D.



Measure the crankshaft top bearing support I.D.

2. Measure the bearing support I.D. and crank pin O.D. code to determine the replacement bearing (see page 12-12)



# CRANKSHAFT/PISTON

## MAIN BEARING DIS ASSEMBLY TOOL

1. Remove the main bearing disassembly tool from the crankshaft.

2. Wipe the main bearing disassembly tool with a clean cloth.

3. Apply a thin coat of engine oil to the main bearing disassembly tool.

# CRANKSHAFT/PISTON

1. Apply a thin coat of engine oil to the main bearing disassembly tool.

2. Wipe the main bearing disassembly tool with a clean cloth.

3. Apply a thin coat of engine oil to the main bearing disassembly tool.

## CAUTION

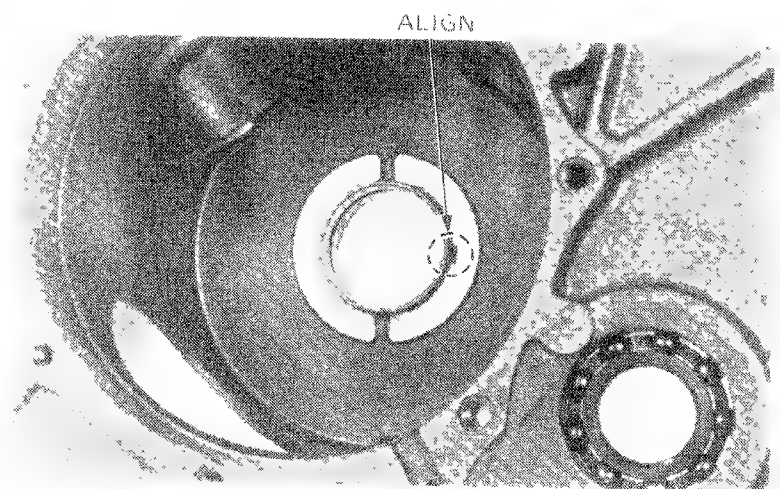
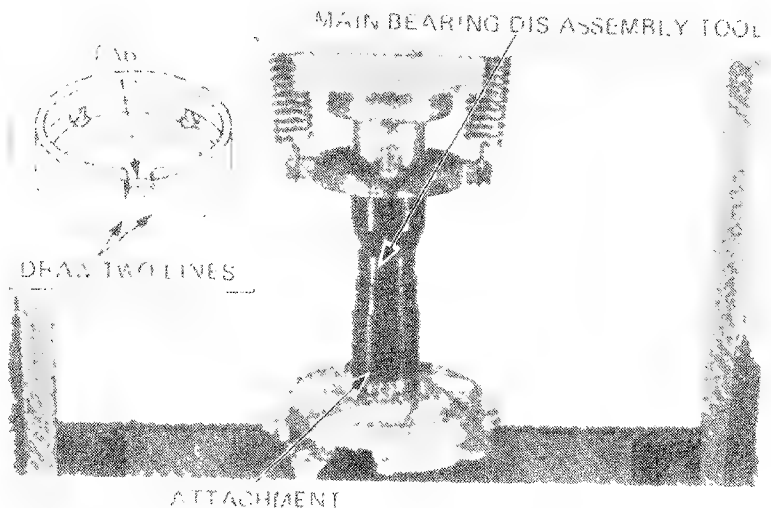
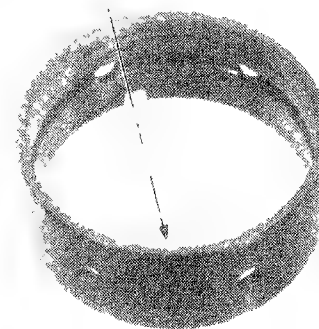
Do not use the main bearing disassembly tool to remove the main bearing disassembly tool from the crankshaft.

1. Apply a thin coat of engine oil to the main bearing disassembly tool.

2. Wipe the main bearing disassembly tool with a clean cloth.

3. Apply a thin coat of engine oil to the main bearing disassembly tool.

## CRANKSHAFT/PISTON





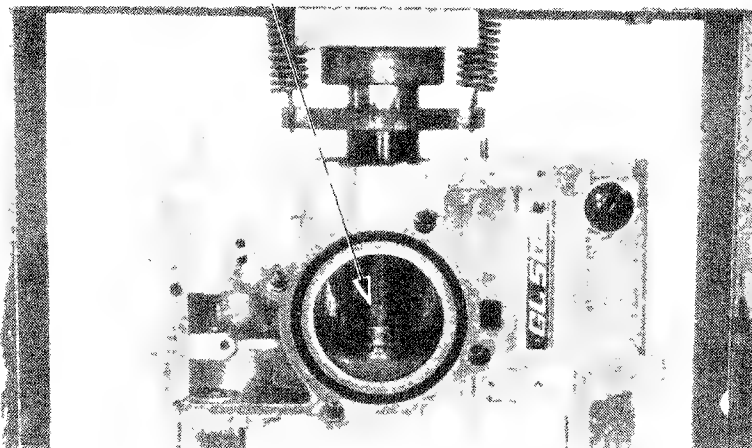
## CRANKSHAFT/PISTON

Remove the cap from the crank. Use the end of the crank pin to pry the cap off.

### CAUTION

Do not use a screwdriver to pry the cap off the crank. This will damage the crankshaft.

### MAIN BEARING DIS ASSEMBLY TOOL

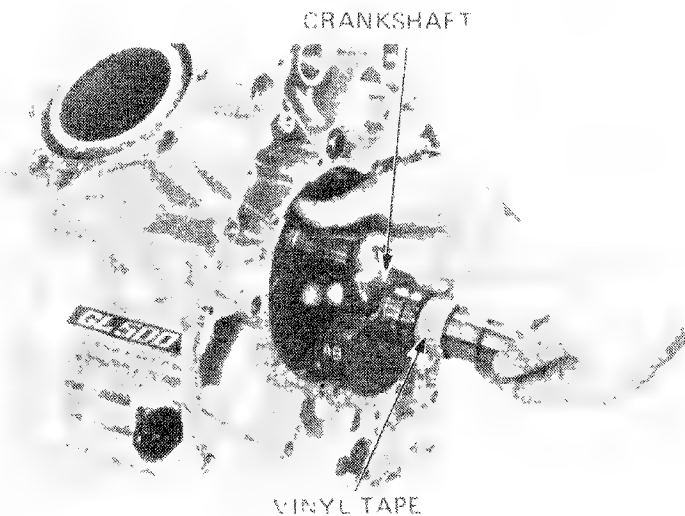


## CRANKSHAFT INSTALLATION

Install the lower main bearing inserts into the crankshaft.

### NOTE

1. Lubricate the bearings, main journals and crank pin with molybdenum disulfide grease.
2. Wrap the splines of the crankshaft and timing gear area with vinyl tape to prevent damage.

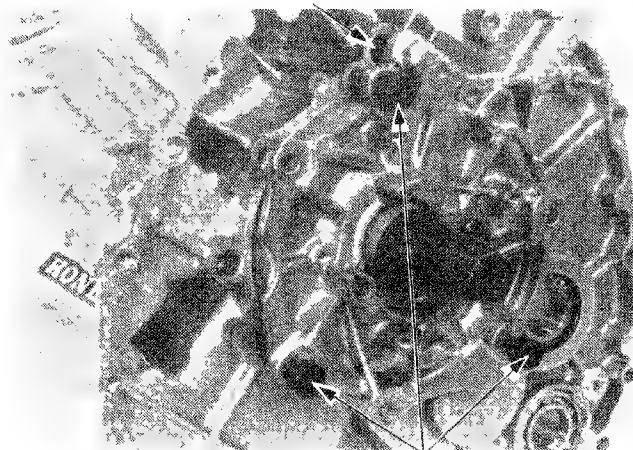


3. Install the O-ring and collar.
4. Install the crankshaft holder cap.
5. Tighten the bolts in the crankshaft holder cap.

### NOTE

1. Lubricate the bearing with molybdenum disulfide grease.
2. Tighten the guide bolts so that the cap is secured.

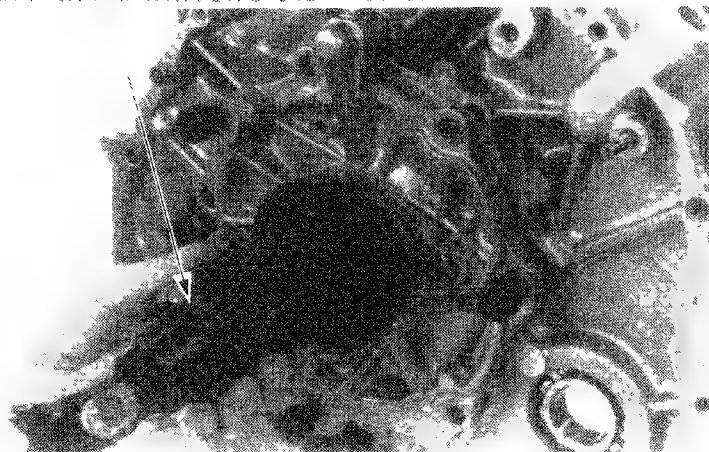
### O-RING AND COLLAR



### GUIDE BOLT

Place the crankshaft holder cap into place with hammer and driver.

CRANK CAP DRIVER 07945-4150100



Tighten the cap bolts.

**TORQUE: 20–24 N·m (2.0–2.4 kg·m  
14–17 ft·lb)**

**NOTE:**

After tightening the bolts, make sure that the crankshaft rotates freely.

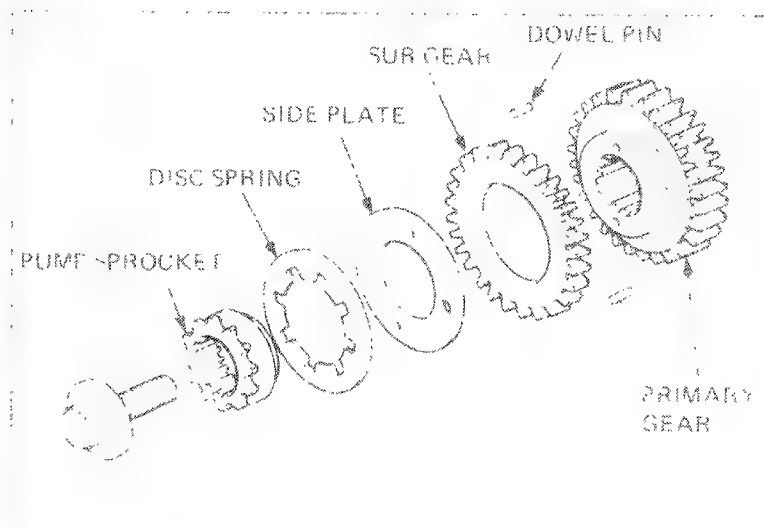


Install the primary gear, primary sub gear, side plate, disc spring and oil pump drive sprocket.

**NOTE:**

Install the disc spring with the pawls placed over the dowel pins to prevent them from coming out during operation. Before assembling, lubricate all parts with engine oil.

Note the primary sub gear and side plate directions by referring to the marks made during disassembly.







Use the CRANK GEAR HOLDER to prevent the  
crank gear from rotating  
while the primary gear  
TORQUE 80-95 N-m (8.0-9.5 kg-m,  
58-69 ft lb)

CRANK GEAR HOLDER 07924-4150000

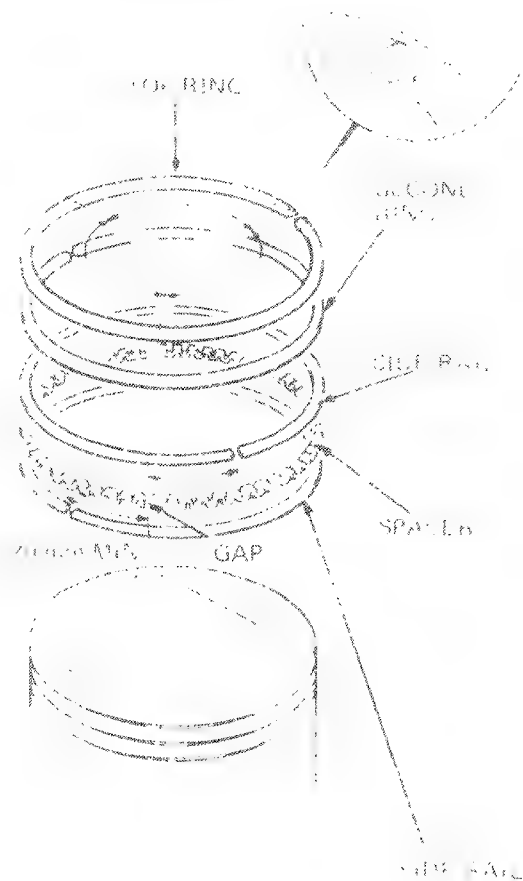


## PISTON INSTALLATION

Be sure to align the ring lands and side faces  
when installing the piston rings.

### NOTE

- Do not damage the piston and piston rings  
during assembly.
- The rings should be installed with the mark  
facing up.
- Space the piston ring end gaps 120 degrees  
apart, avoiding the piston pin and thrust  
sides.
- Do not skip the gaps in the oil rings.  
After installing the rings they should be  
checked.





Coat the rod small end with molybdenum disulfide grease.

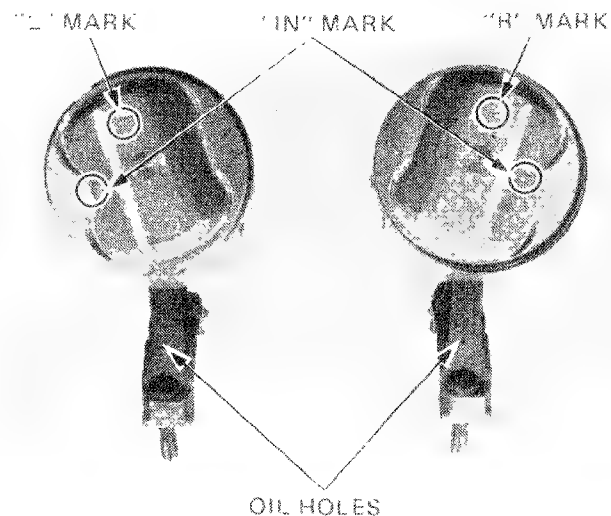
Assemble the pistons and connecting rods with the old pin clips and new piston pin clips.

**NOTE:**

Do not interchange the pistons, piston pins and connecting rods.

Make sure that the piston pin clips are properly seated.

Install the piston with the "L" mark on the left and the piston with the "R" mark on the right.



## CONNECTING ROD INSTALLATION

Coat the rod bearings with molybdenum disulfide grease.

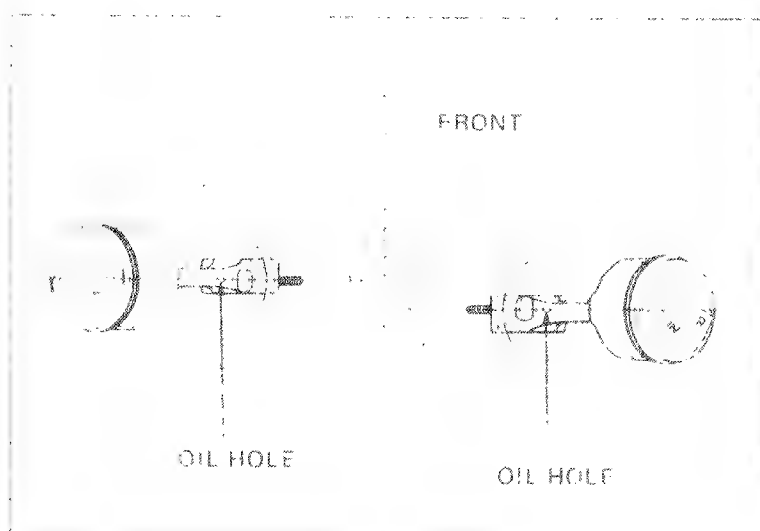


Slide the rod assemblies into the cylinders from the rear of the engine case.

**NOTE:**

The rod assemblies should be installed with the piston "IN" marking to the rear.

Lubricate the piston ring grooves and cylinder walls with engine oil.

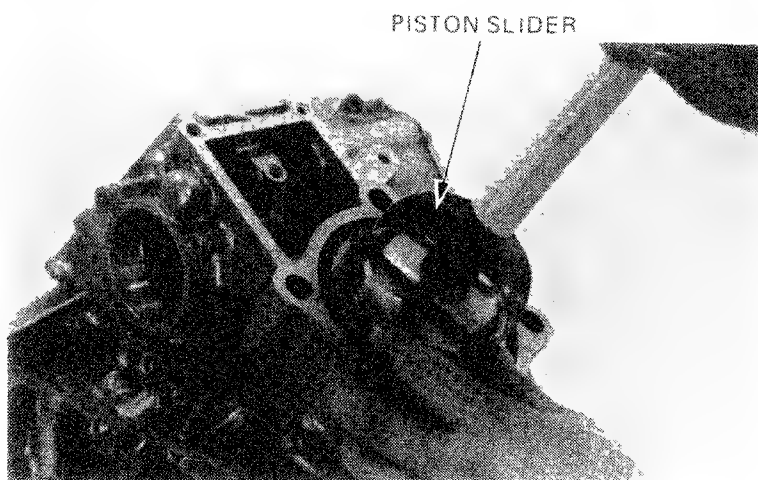




Bring the piston to T.D.C.  
Compress the piston rings with the PISTON SLIDER and insert the piston into the cylinder.

## NOTE

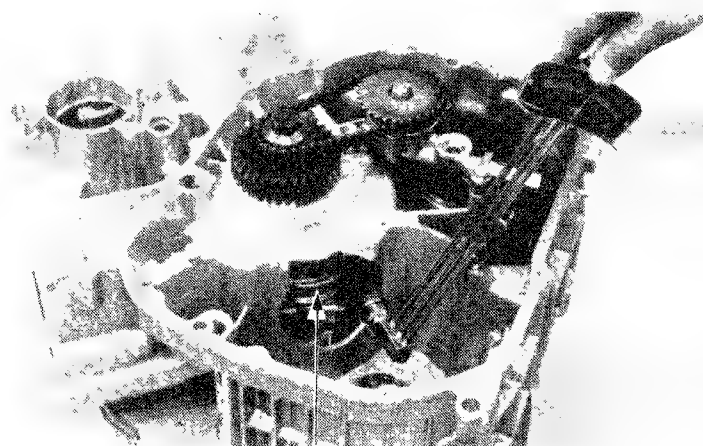
Do not damage the pistons or rings during assembly.  
Insert the piston into the cylinder, aligning the big end with the crankpin.



Install the connecting rod caps.  
Torque the connecting rod cap bolts.  
**TORQUE: 28–32 N·m (2.8–3.2 kg·m,  
20–23 ft·lb)**

## NOTE

- Be sure the bearing caps are installed in their correct location.
- Turn the crankshaft to make sure the rods rotate freely without binding.
- Torque the bolts evenly in 2–3 steps.



CONNECTING ROD BEARING CAP



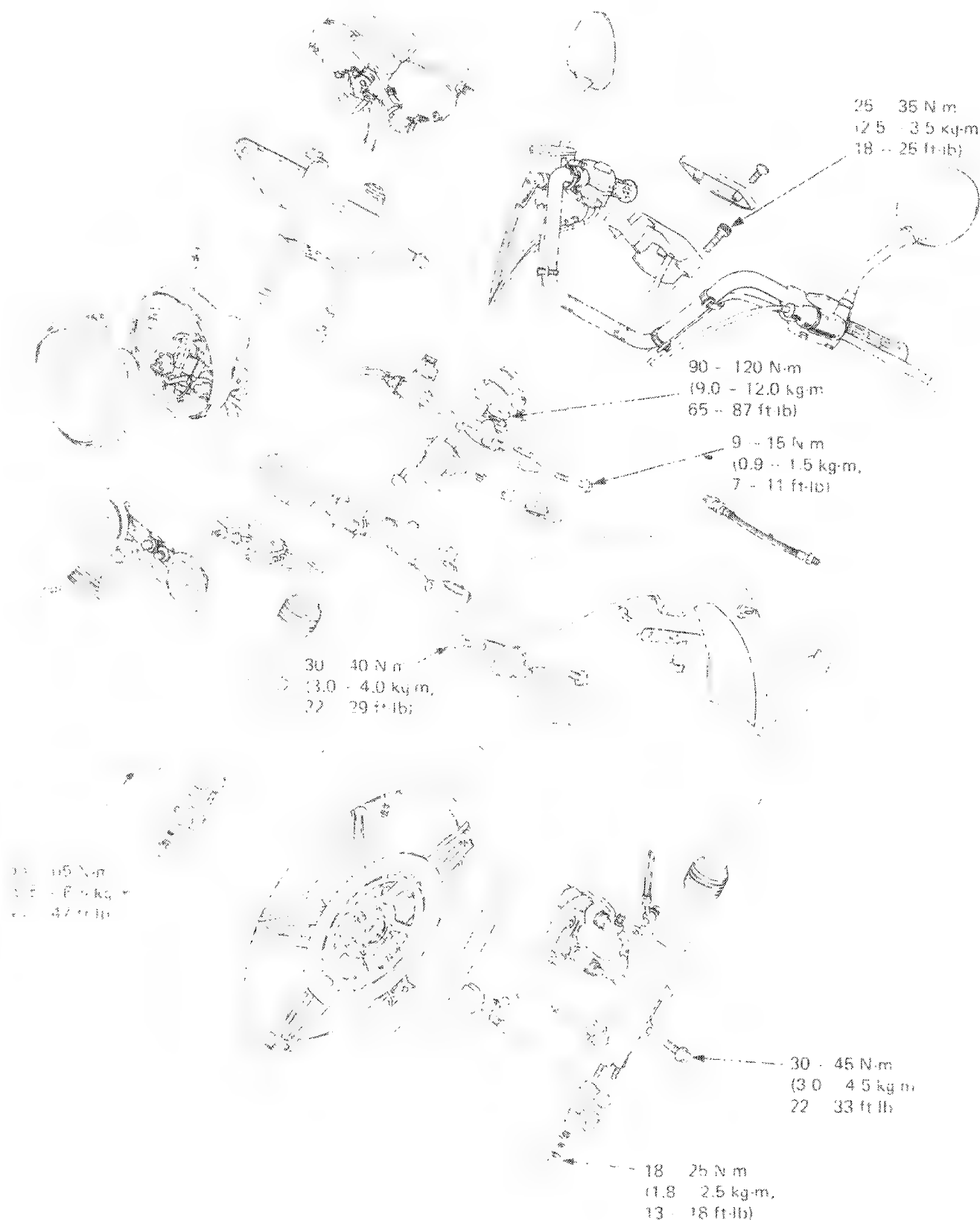
**HONDA**  
GL500  
GL500 INTERSTATE

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MEMO



FRONT WHEEL/SUSPENSION





**HONDA**  
GL300  
GL500 INTERSTATE

# 13. FRONT WHEEL/ SUSPENSION

|                     |      |               |       |
|---------------------|------|---------------|-------|
| SERVICE INFORMATION | 13-1 | HANDLEBAR     | 13-4  |
| TROUBLESHOOTING     | 13-2 | FRONT WHEEL   | 13-6  |
| HEADLIGHT           | 13-3 | FRONT FORK    | 13-12 |
| INSTRUMENTS         | 13-4 | STEERING STEM | 13-21 |

## SERVICE INFORMATION

### REPAIRABLE PARTS

- The front fork assembly is a sealed unit. Do not attempt to disassemble or repair it.
- The front wheel assembly is a sealed unit. Do not attempt to disassemble or repair it.
- The front fork tube bushing, slider bushing and back up ring for damage after disassembling the front fork and replace if necessary.

### TOOLS

#### Special

|                               |               |
|-------------------------------|---------------|
| Front fork                    | 07914-3230001 |
| Front wheel hub               | 07917-3230000 |
| Front wheel slider attachment | 07947-K520200 |
| Front wheel hub               | 07946-3210400 |

|                               |               |
|-------------------------------|---------------|
| Front fork                    | 07914-3230001 |
| Front wheel hub               | 07917-3230000 |
| Front wheel slider attachment | 07947-K520200 |
| Front wheel hub               | 07946-3210400 |
| Front wheel hub               | 07946-3210400 |

#### Common

|                              |               |
|------------------------------|---------------|
| Bearing retainer wrench B    | 07710-0010200 |
| Bearing retainer wrench body | 07710-0010401 |
| Fork oil seal driver body    | 07747-0010100 |
| Fork oil seal                | 07710-0010000 |
| Fork oil seal                | 07710-0010000 |
| Fork oil seal                | 07710-0010000 |
| Fork oil seal                | 07710-0010000 |
| Fork oil seal                | 07710-0010000 |
| Fork oil seal                | 07710-0010000 |
| Fork oil seal                | 07710-0010000 |

### REPAIR PROCEDURE

|                        | Standard | Service Limit |
|------------------------|----------|---------------|
| Front wheel hub        |          | 0.20 (0.008)  |
| Front wheel hub impact |          | 2.0 (0.08)    |
| Front wheel hub impact |          | 2.0 (0.08)    |
| Front wheel hub impact |          | 2.0 (0.08)    |
| Front wheel hub impact |          | 2.0 (0.08)    |
| Front wheel hub impact |          | 2.0 (0.08)    |
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| Front wheel hub impact |          | 2.0 (0.08)    |
| Front wheel hub impact |          | 2.0 (0.08)    |
| Front wheel hub impact |          | 2.0 (0.08)    |

### REPAIR PROCEDURE

|                        |              |
|------------------------|--------------|
| Front wheel hub        | 0.20 (0.008) |
| Front wheel hub impact | 2.0 (0.08)   |
| Front wheel hub impact | 2.0 (0.08)   |
| Front wheel hub impact | 2.0 (0.08)   |
| Front wheel hub impact | 2.0 (0.08)   |
| Front wheel hub impact | 2.0 (0.08)   |
| Front wheel hub impact | 2.0 (0.08)   |
| Front wheel hub impact | 2.0 (0.08)   |
| Front wheel hub impact | 2.0 (0.08)   |
| Front wheel hub impact | 2.0 (0.08)   |



## TROUBLESHOOTING

### Hard Steering

1. Steering stem nut is too tight
2. Loose front steering bearings
3. Cracked steering stem ball race and/or cone race
4. Low front fork oil pressure

### Steers to One Side or Does Not Track Straight

1. Bent frame
2. Bent fork
3. Forks installed incorrectly
4. Forks adjusted incorrectly
5. Bent swingarm
6. Bent axle installed incorrectly

### Front Wheel Wobbling or Vibration

1. Loose axle, fork or rear
2. Loose wheel bearings
3. Loose steering stem nut or bearings
4. Loose wheel nut on swingarm pivot bolt
5. Bent axle, fork and wheel
6. Bent forks
7. Excessive steering knuckle wheel
8. Bent forks
9. Bent swingarm
10. Bent or cracked frame
11. Loose engine mounts

### Soft Suspension

1. Weak coil springs
2. Insufficient fluid in front forks
3. Low front fork oil pressure

### Hard Suspension

1. Excessive load weight on front forks
2. Clogged fork hydraulic passage
3. Bent fork tubes
4. Fork binding
5. Low front fork oil pressure

### Front Suspension Noise

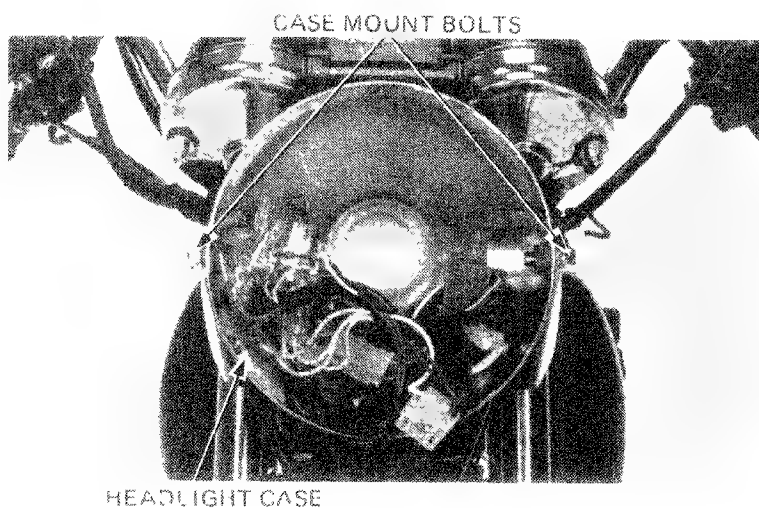
1. Squeal/ringing
2. Clunk/bent and rattle
3. Loose front fork fasteners
4. Loose steering knuckle
5. Bent fork tubes/racks



## HEADLIGHT

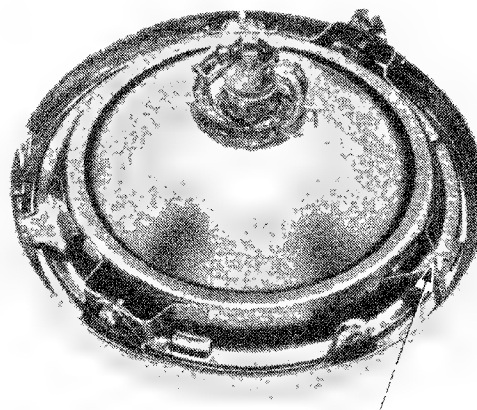
### HEADLIGHT CASE REMOVAL

Remove the headlight.  
Disconnect all wires at their couplers and connectors.  
Unscrew the headlight case mounts and remove the case.



### HEADLIGHT DISASSEMBLY/ASSEMBLY

Remove the retaining screws and horizontal adjusting screw from the rim.  
Remove the five headlight unit retaining screws and headlight unit.  
Assembly is the reverse of disassembly.



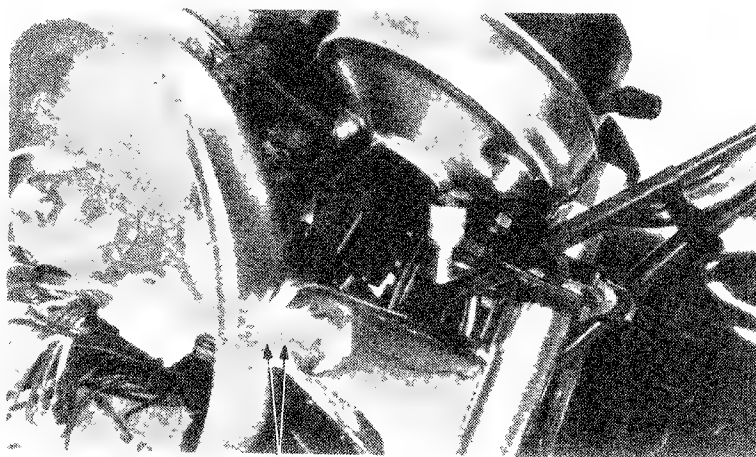
### HEADLIGHT CASE INSTALLATION

Align the punch marks on the headlight case and bracket.  
Connect all wires at their couplers and connectors.

#### NOTE

Check each component for operation after assembly.

Disconnect the headlight coupler.  
Align the headlight thread holes with the headlight case holes.  
Secure the headlight with three screws.  
Adjust the headlight aim after assembly. (Page 3-13)





## INSTRUMENTS

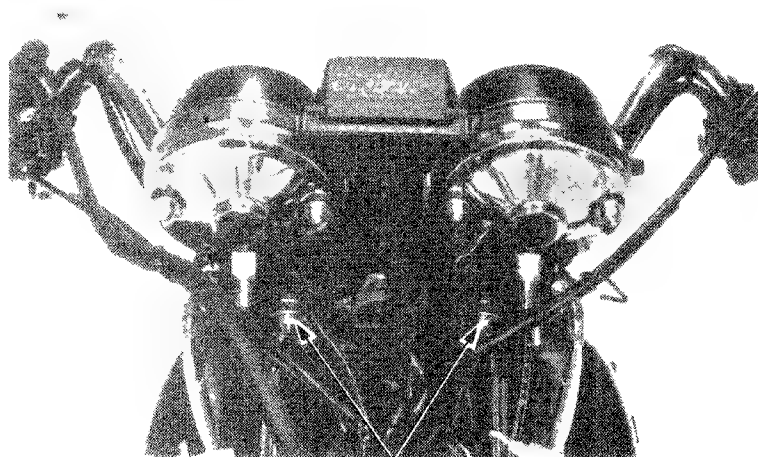
### REMOVAL

Remove the headlight case.

Disconnect the instrument wire connectors and cap it.

Remove the speedometer and tachometer cables from the instruments.

Remove the instrument mounting nuts and the instruments.



INSTRUMENT MOUNTING NUTS

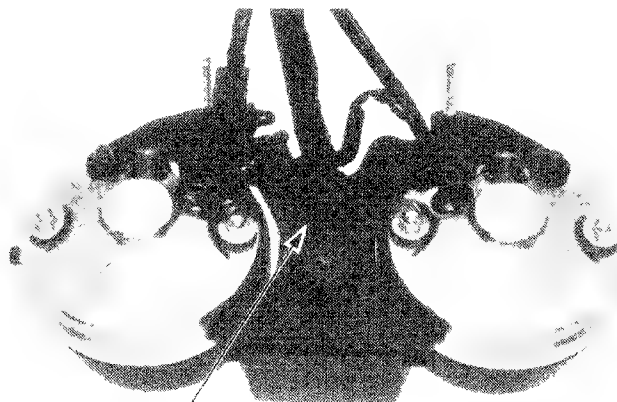
### DISASSEMBLY

Remove the meter mounting nuts and meter from the mounting bracket.

Remove the top nuts and meter cover.

Remove the two screws and indicator socket.

Install the removed parts in the reverse order of disassembly.



MOUNTING BRACKET

## HANDLEBAR

### REMOVAL

Disconnect the front brake stoplight switch wires and remove the master cylinder.

#### NOTE

Do not loosen the brake hose unless necessary.

#### WARNING

After removing the master cylinder, keep it level. Do not tilt the master cylinder, or turn it upside down.

Do not hang the master cylinder by the brake hose.



STOPLIGHT SWITCH WIRE

Remove the three screws attaching the front hand-  
grip to the handlebar.  
Remove the three screws holding the left handlebar  
switch housing.  
Remove the wire bands.  
Remove the left grip and the clutch lever holder.

CLUTCH LEVER HOLDER

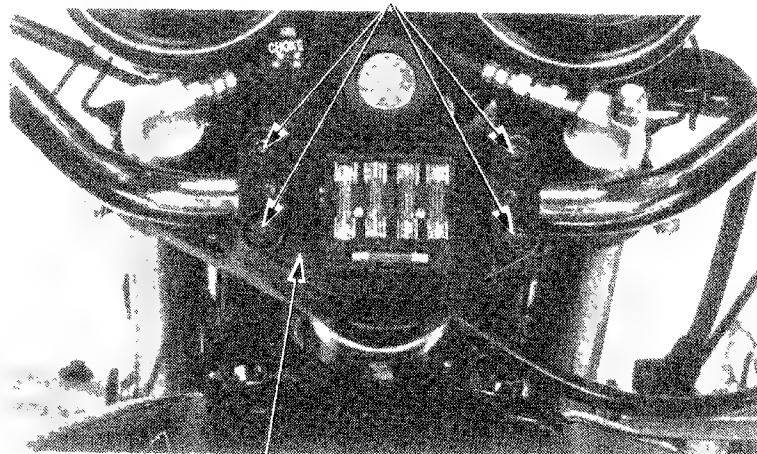
RIGHT HANDLEBAR SWITCH



LEFT HANDLEBAR SWITCH

Remove the upper holder cover.  
Remove the four upper holder socket bolts and  
washers.  
Remove the handlebars.

SOCKET BOLTS



UPPER HOLDER

## INSTALLATION

Installation of the handlebar is essentially the  
reverse order of removal.

### NOTE

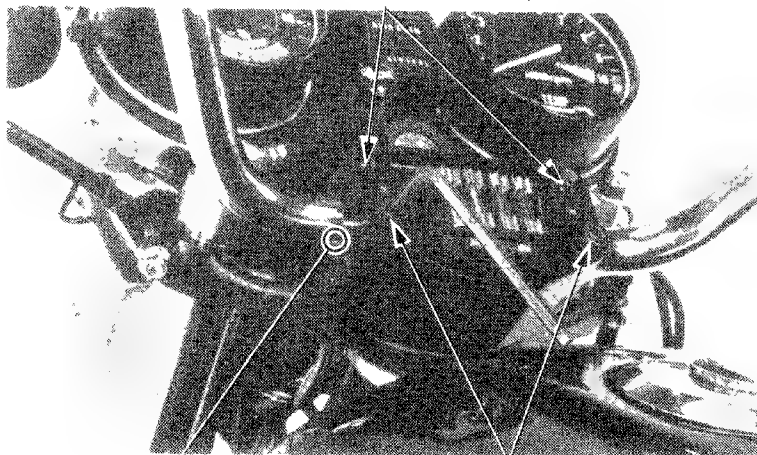
Check the throttle grip area of the handlebar  
for damage.

Align the punch marks on the handlebar with the  
center of the upper holder and fork bridge.  
Insert the forward socket bolts first, then tighten  
the rear socket bolts.

**TORQUE** 25-35 N·m

(2.5-3.5 kg·m 18-25 ft·lb)

SOCKET BOLTS (FORWARD)



PUNCH MARK

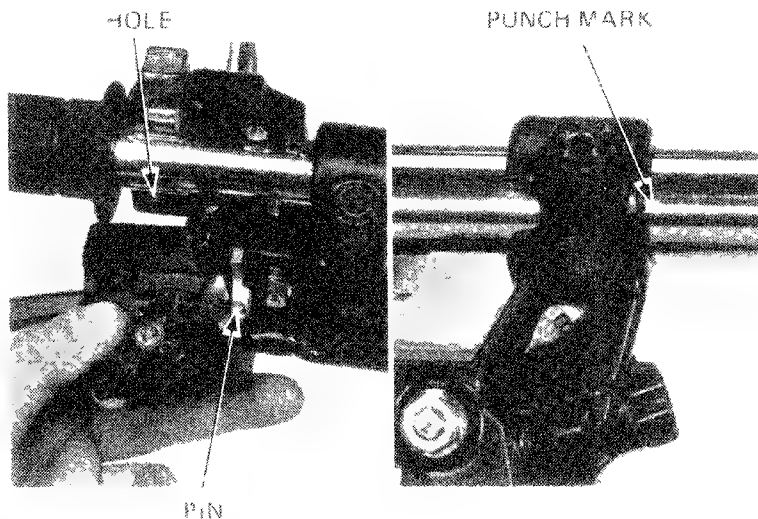
SOCKET BOLTS (REAR)

Insert the pin on the bottom half of each switch assembly into the hole in the handlebar. Tighten the forward screws first, then tighten the rear screws to the same torque.

## CAUTION

*Make sure the wire harness is not pinched between the switch assembly and the handlebar.*

Position the clutch lever holder so the gap aligns with the punch mark on the handlebar and tighten the bolt evenly.

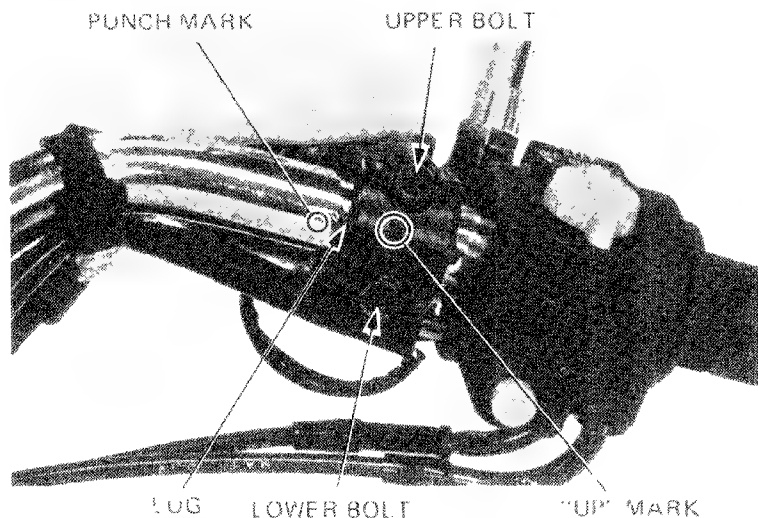


Position the master cylinder on the handlebar. Loosely install the holder with the "UP" mark facing upward using the two bolts.

Align the lug on the holder with the punch mark on the handlebar.

Tighten the upper bolt first, then tighten the lower bolt.

Apply contact cement to the left handlebar grip and push the grip on.



## FRONT WHEEL

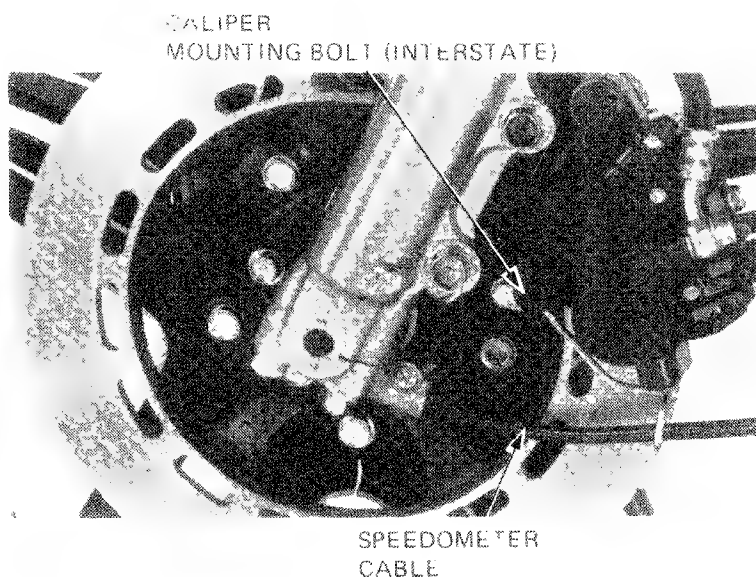
### FRONT WHEEL REMOVAL

Align the front wheel off the ground by placing a jack safely under the engine.

Disconnect the speedometer cable from the speedometer body.

### INTERSTATE MODEL

Remove either the left or right caliper by removing the caliper mounting bolts. Support the caliper so it does not hang from the brake hose.

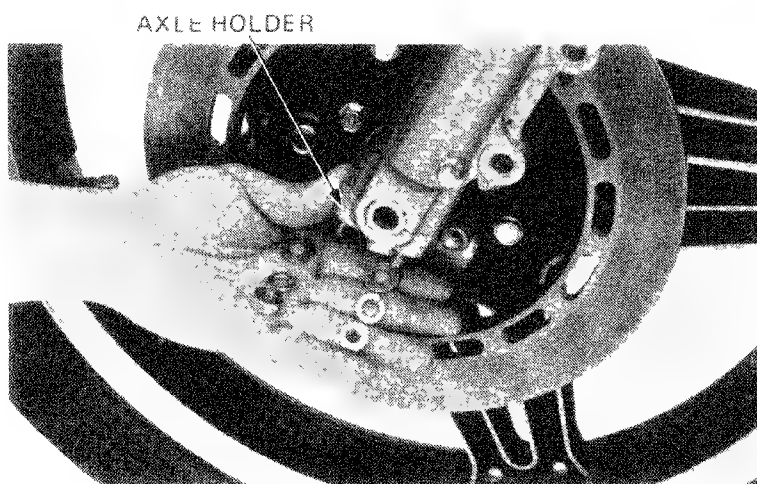




Remove the right and left front axle holders.  
Kick up the bike until the fork legs lift free of the  
axle holder over the front wheel.

**NOTE**

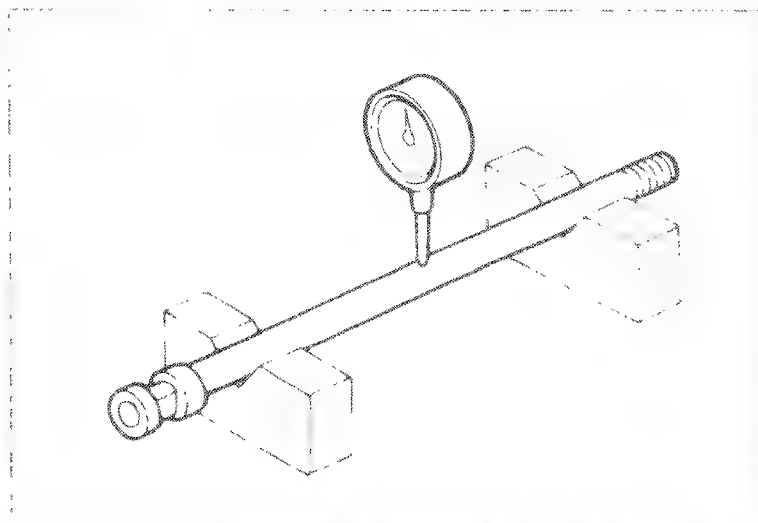
Do not operate the front brake lever after  
removing the front wheel. To do so will cause  
difficulty in refitting the brake disc between  
the brake pads.



**AXLE INSPECTION**

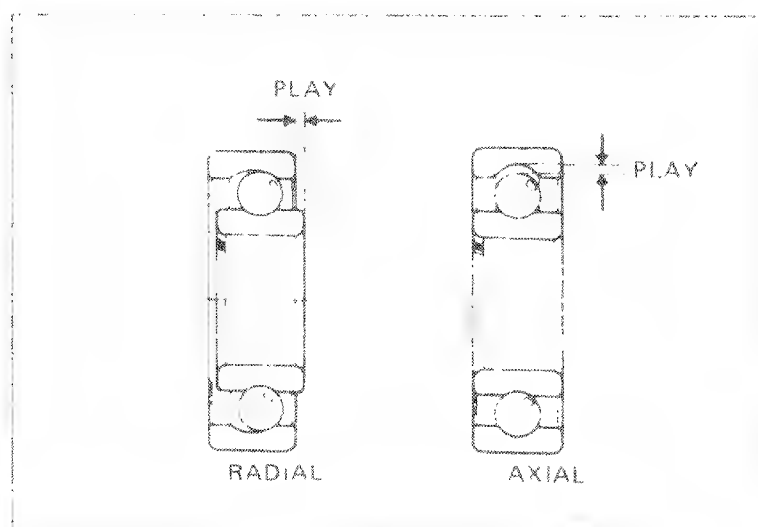
Set the axle in V blocks and measure the runout.  
The actual runout is 1/2 of the total indicator  
reading.

**SERVICE LIMIT: 0.2 mm (0.01 in)**



**WHEEL BEARING INSPECTION**

Check the wheel bearing play by placing the wheel  
on a turning stand and spinning the wheel by hand.  
Replace the bearings with new ones if they are noisy  
or have excessive play.





### WHEEL INSPECTION

Remove the wheel in a truing stand. Spin the wheel slowly and measure the runout with a dial indicator (Fig. 1).

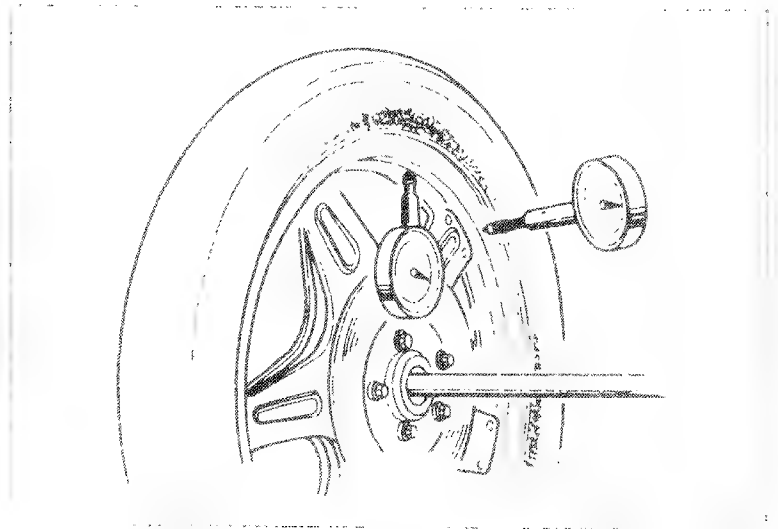
#### SERVICE LIMITS:

RADIAL RUNOUT: 2.0 mm (0.08 in)

AXIAL RUNOUT: 2.0 mm (0.08 in)

#### NOTE:

THE COMSTAR WHEEL cannot be repaired and must be replaced if the service limits are exceeded.

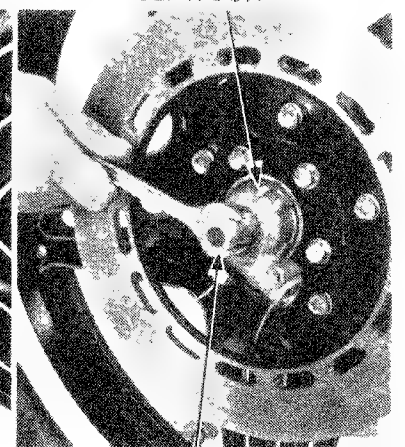
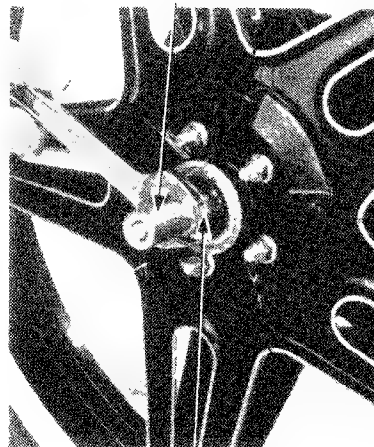


### FRONT WHEEL DISASSEMBLY

Remove the axle nut, speedometer gear box, axle nut plate.

AXLE NUT

SPEEDOMETER  
GEAR BOX

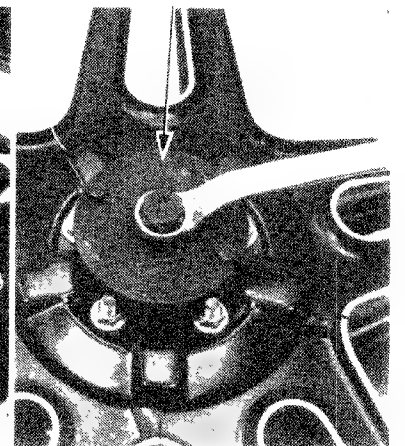
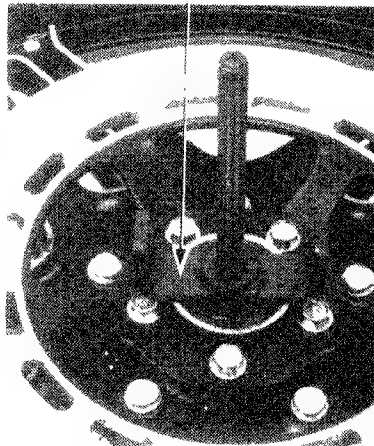


COLLAR

AXLE

RETAINER  
WRENCH BODY

RETAINER WRENCH  
ATTACHMENT



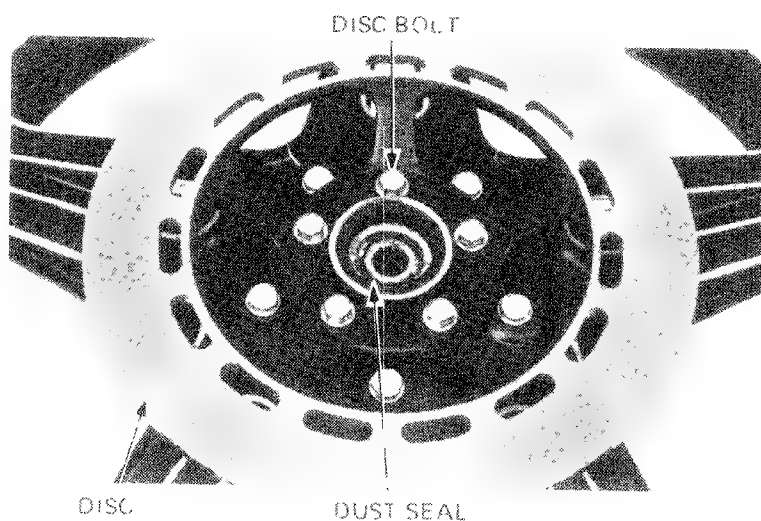
Remove the axle nut retainer.



Remove the disc bolts, disc and dust seal.  
Remove the bearings and the distance collar from the hub.

**NOTE**

If the bearings are removed, replace them with new bearings during assembly.



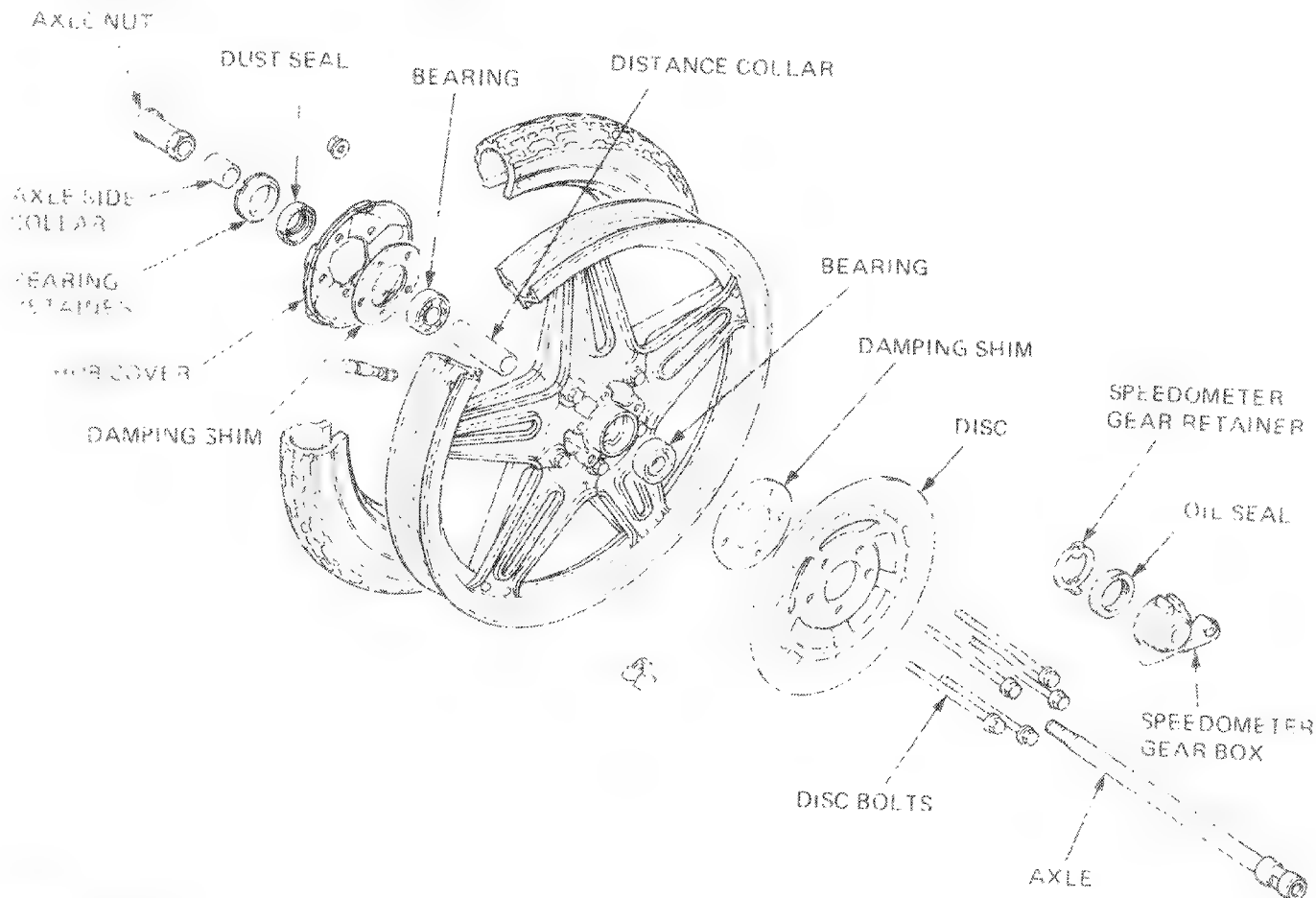
**FRONT WHEEL ASSEMBLY**

**WARNING**

Do not get grease on the brake disc.

**NOTE**

The COMSTAR WHEEL has no rim band.  
Install the bearings with the closed end facing out.



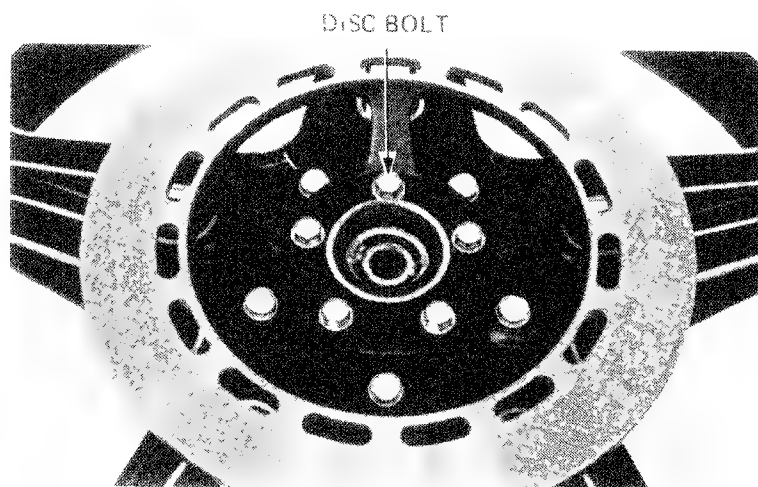




Install the disc, disc bolts and nuts.

**TORQUE** 27-33 N·m

(2.7-3.3 kg·m, 20-24 ft·lb)



DISC BOLT

Push all bearing cavities with grease.

Drive in the right bearing first.

Push the distance collar into place.

**NOTE**

Be certain the distance collar is in position before installing the left bearing.

Drive in the left bearing.

**NOTE**

Drive the bearing squarely. Make sure that it is fully seated and that the sealed side is facing out.



BEARING DRIVER HANDLE A

ATTACHMENT 42 x 47 mm  
PILOT 15 mm

Inspect the bearing retainer. If place of the threads is damaged.

Install the bearing retainer.

Apply grease to the dust seal lip with grease.

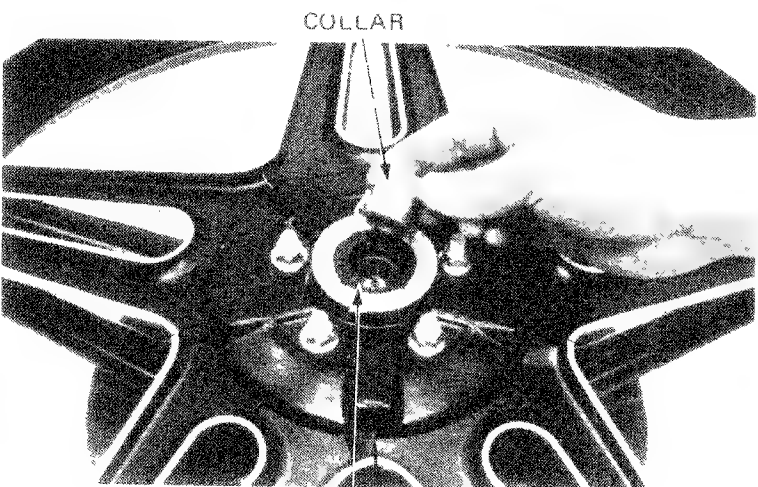
Push the dust seal and collar in the hub to the edge of the retainer.

**NOTE**

The spoke plate bolts and nuts require no tightening since they are secured with lock plate. Do not remove the pins.

**CAUTION**

Remove all the grease around the outside of the dust seal.



COLLAR

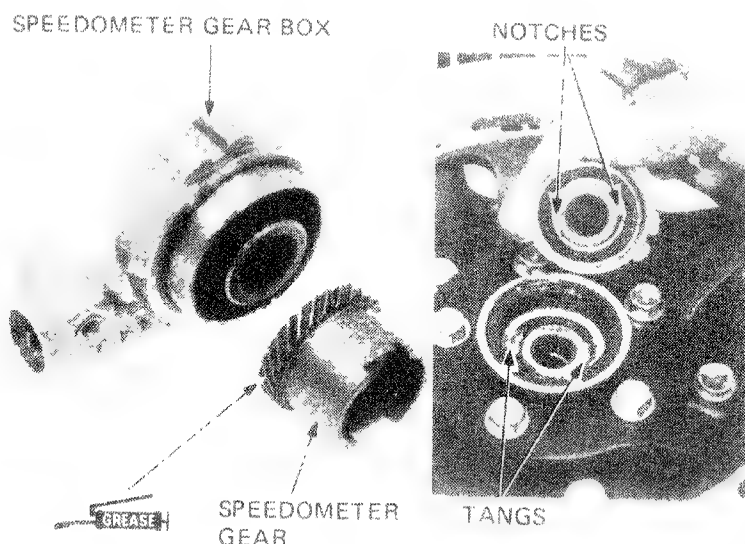
DUST SEAL



Install the speedometer gear retainer in the hub from the left side.  
Lubricate the oil seal lip and install.  
Disassemble the speedometer gear box and lubricate the gears and sliding surfaces.  
Install the speedometer gear in the wheel hub, aligning the gear box notches with the tangs in the retainer.

**CAUTION**

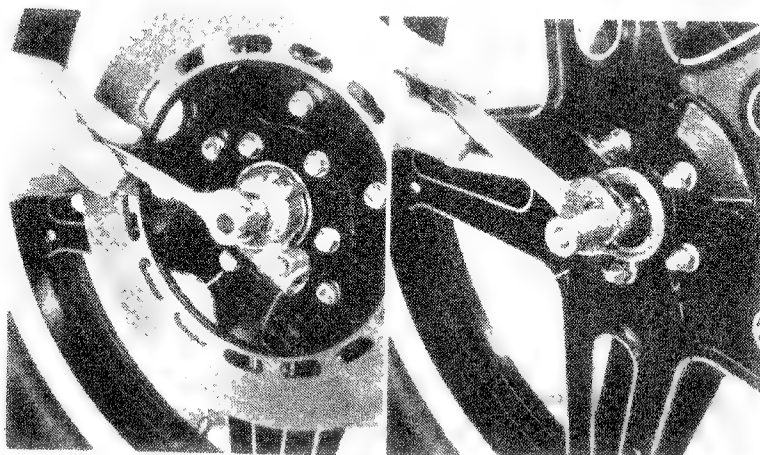
*Remove all the grease around the outside of the oil seal.*



Install the axle and axle nut, then tighten the axle nut.

**TORQUE:** 55–65 N·m  
(5.5–6.5 kg·m, 40–47 ft·lb)

Clean the brake disc with a high quality degreasing agent.



**FRONT WHEEL INSTALLATION**

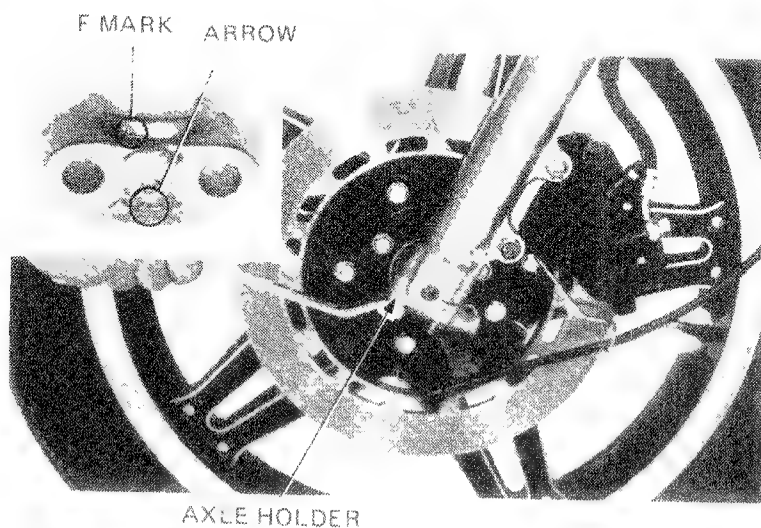
Fit the brake disc carefully between the pads of the caliper already in place and lower the forks on the axle. Be sure that the lug on the speedometer gear box is behind the left fork leg lug.

Install the axle holders with the "F" mark and arrow forward.

Tighten the axle holders nuts starting with the forward nuts.

**TORQUE:** 18–25 N·m  
(1.8–2.5 kg·m, 13–18 ft·lb)

Connect the speedometer cable to the speedometer gearbox.





## FRONT FORK

### FRONT FORK REMOVAL

- Remove the front wheel (Page 13-6).
- Remove the brake caliper by unscrewing the caliper mount bolts.
- Remove the brake hose clamp.

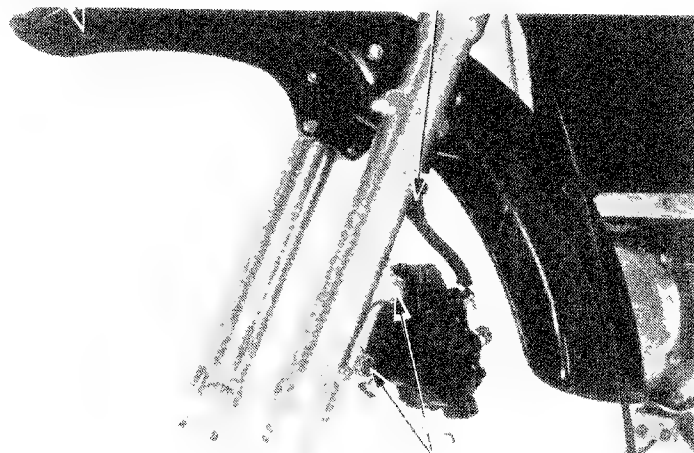
#### NOTE

Do not loosen the brake hose unless necessary.

Remove the front fender.

FRONT FENDER

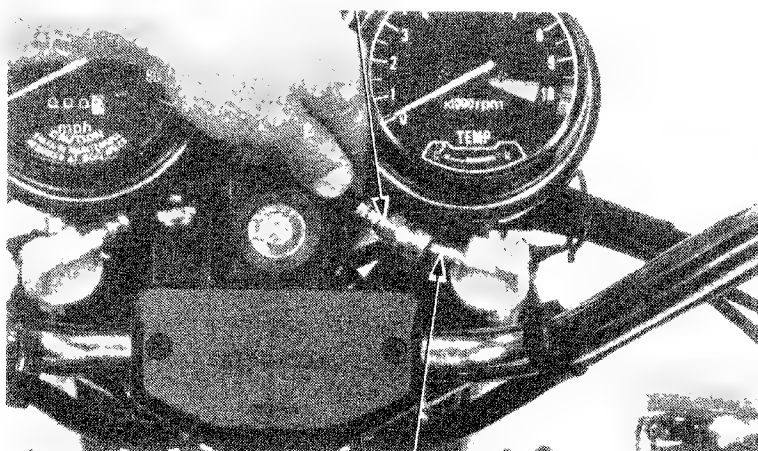
HOSE CLAMP



CALIPER MOUNT BOLTS

- Remove the indicator light cover.
- Disconnect the air hose from the right fork connector.
- Remove the connector from the right fork cap bolt.
- Remove the air hose from the left fork cap bolt.

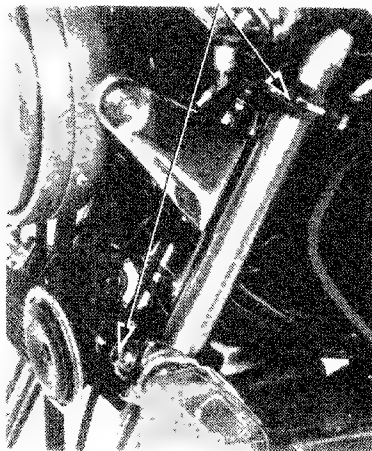
AIR HOSE



CONNECTOR

- Loosen the fork pinch bolts.
- Remove the fork tubes, rotating them by hand if necessary.

FORK PINCH BOLTS





## FRONT FORK DISASSEMBLY

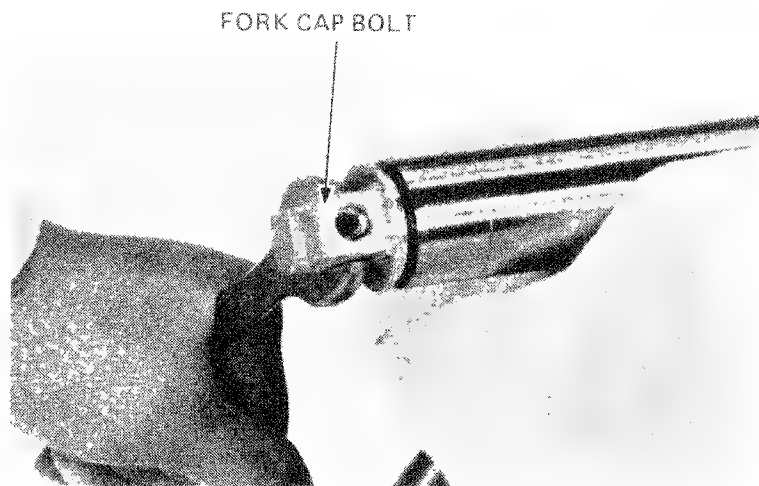
- Clamp the fork tube in a vise.
- Remove the fork cap bolt.

### CAUTION

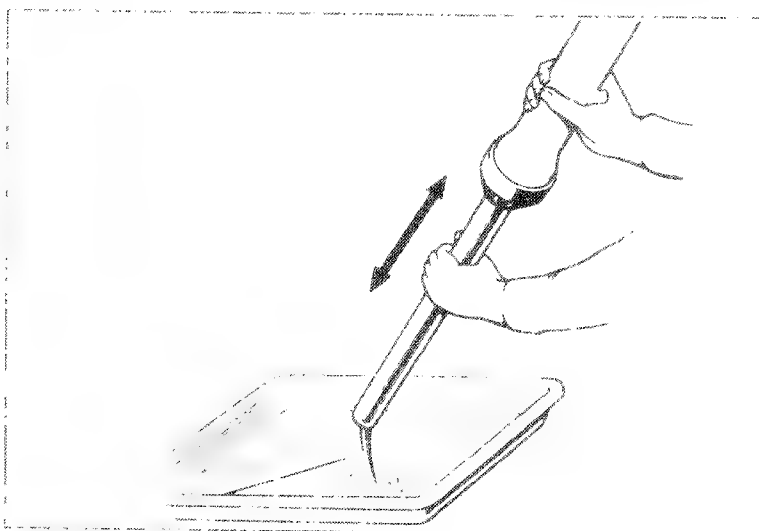
*Do not damage or bend the sliding surface.*

### WARNING

*Use care when loosening the bolt or the spring will pop out as a projectile, which may cause injury.*



- Remove the fork spring.
- Flare out any remaining fork fluid by pumping the fork up and down several times.



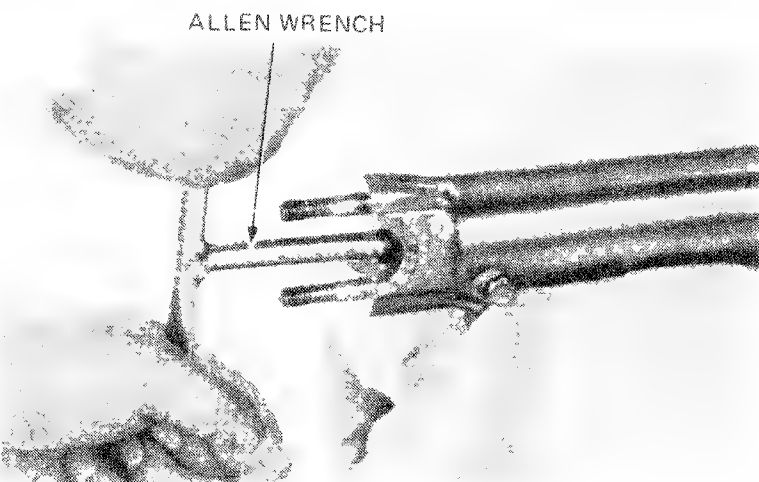
- Hold the fork slider in a vise with soft jaws.
- Remove the hex bolt.

### CAUTION

*Excessive vise pressure can damage the fork slider.*

### NOTE

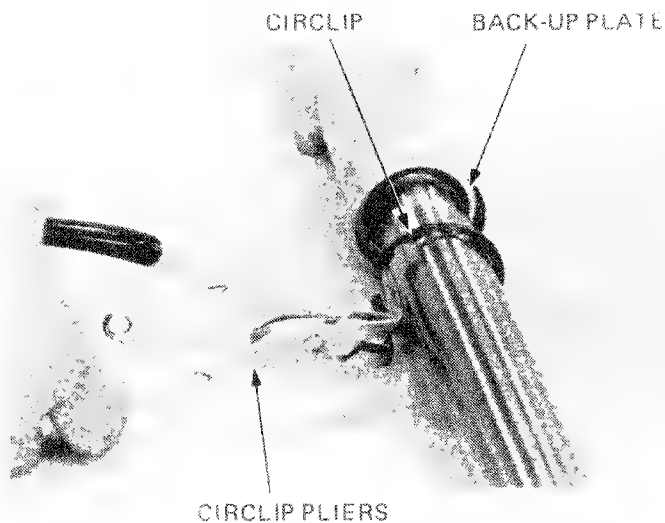
*Temporarily install the spring and fork bolt. If difficulty is encountered in removing the bolt.*





## FRONT WHEEL/SUSPENSION

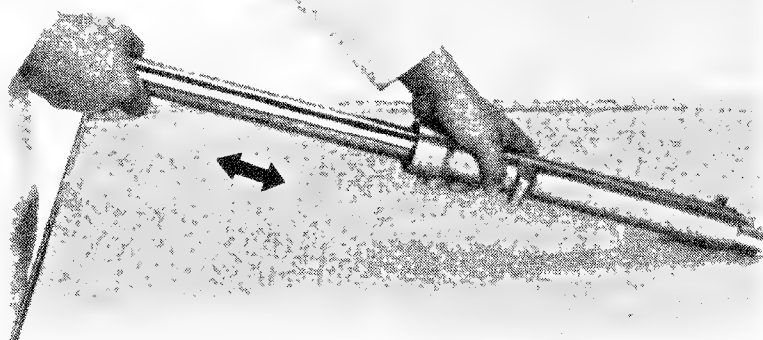
Remove the oil seal, circlip and back-up plate.



Remove the fork tube from the slider by pumping it in and out several times.

### NOTE

The slider bushing causes resistance and the fork tube bushing must force it out.

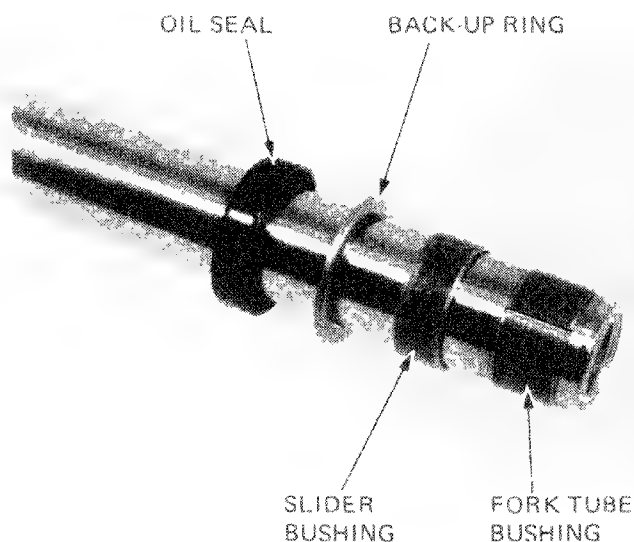


Remove the oil seal, back up ring and slider bushing from the fork tube.

### NOTE

Do not remove the fork tube bushing unless it is necessary to replace it with a new one.

Remove the piston from the fork tube and the oil back plate from the slider.



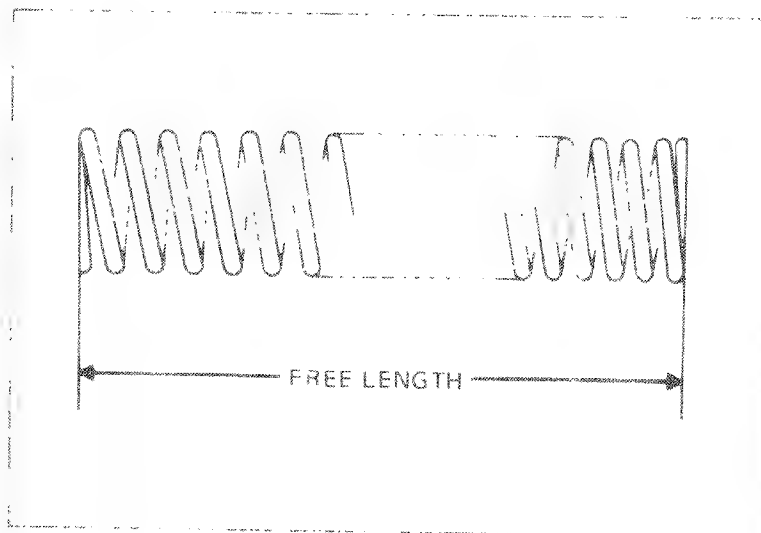


### FRONT FORK SPRING FREE LENGTH INSPECTION

Measure the fork springs free length.

#### SERVICE LIMIT

|       |                   |
|-------|-------------------|
| UPPER | 97.7 mm (3.85 in) |
| LOWER | 493 mm (19.4 in)  |



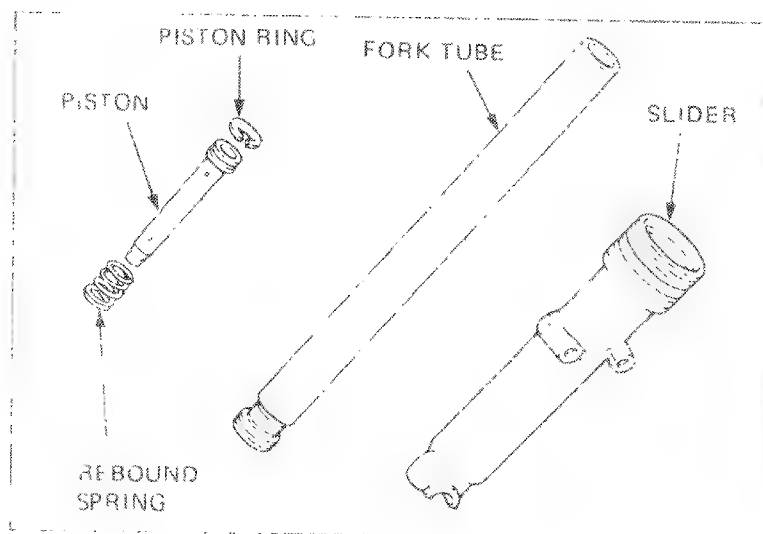
### FORK TUBE/ FORK SLIDER/ PISTON INSPECTION

Check the fork tubes, fork sliders and pistons for score marks, scratches or excessive or abnormal wear.

Replace any components which are worn or damaged.

Check the fork piston ring for wear or damage.

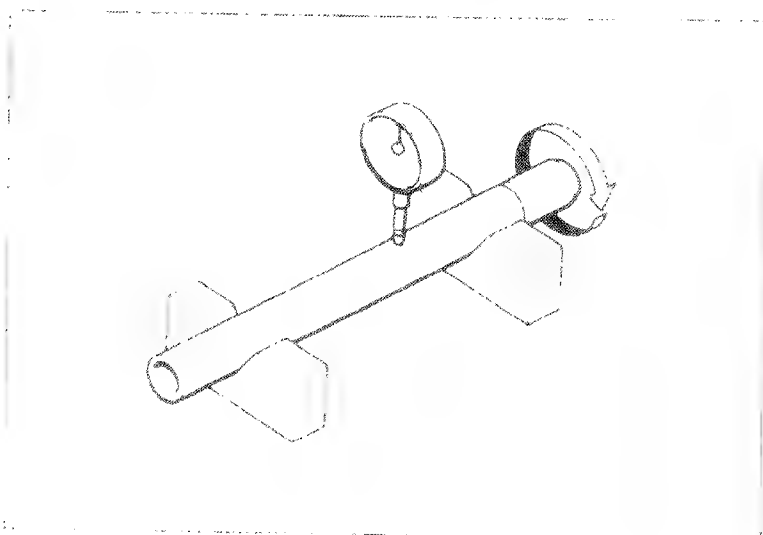
Check the rebound spring for fatigue or damage.



### FORK TUBE INSPECTION

Set the fork tube in V blocks and read the runout. Take 1/2 the total indicator reading to determine the actual runout.

SERVICE LIMIT 0.20 mm (0.008 in)



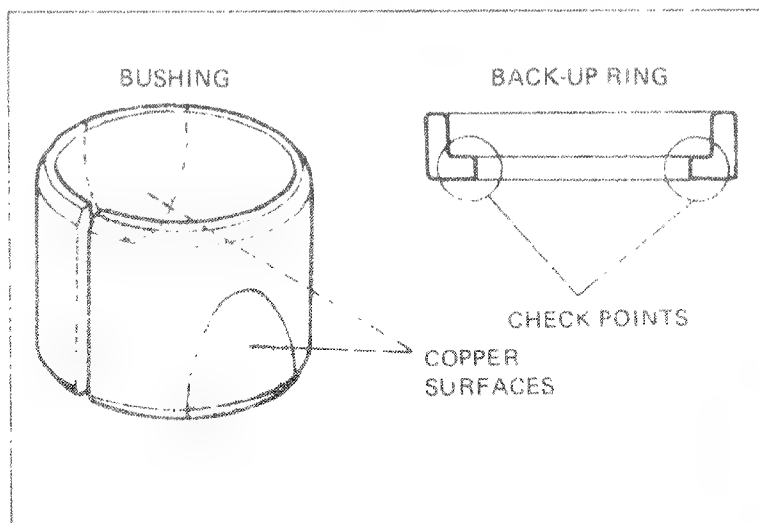


## FRONT WHEEL/SUSPENSION

### BUSHING/BACK-UP RING INSPECTION

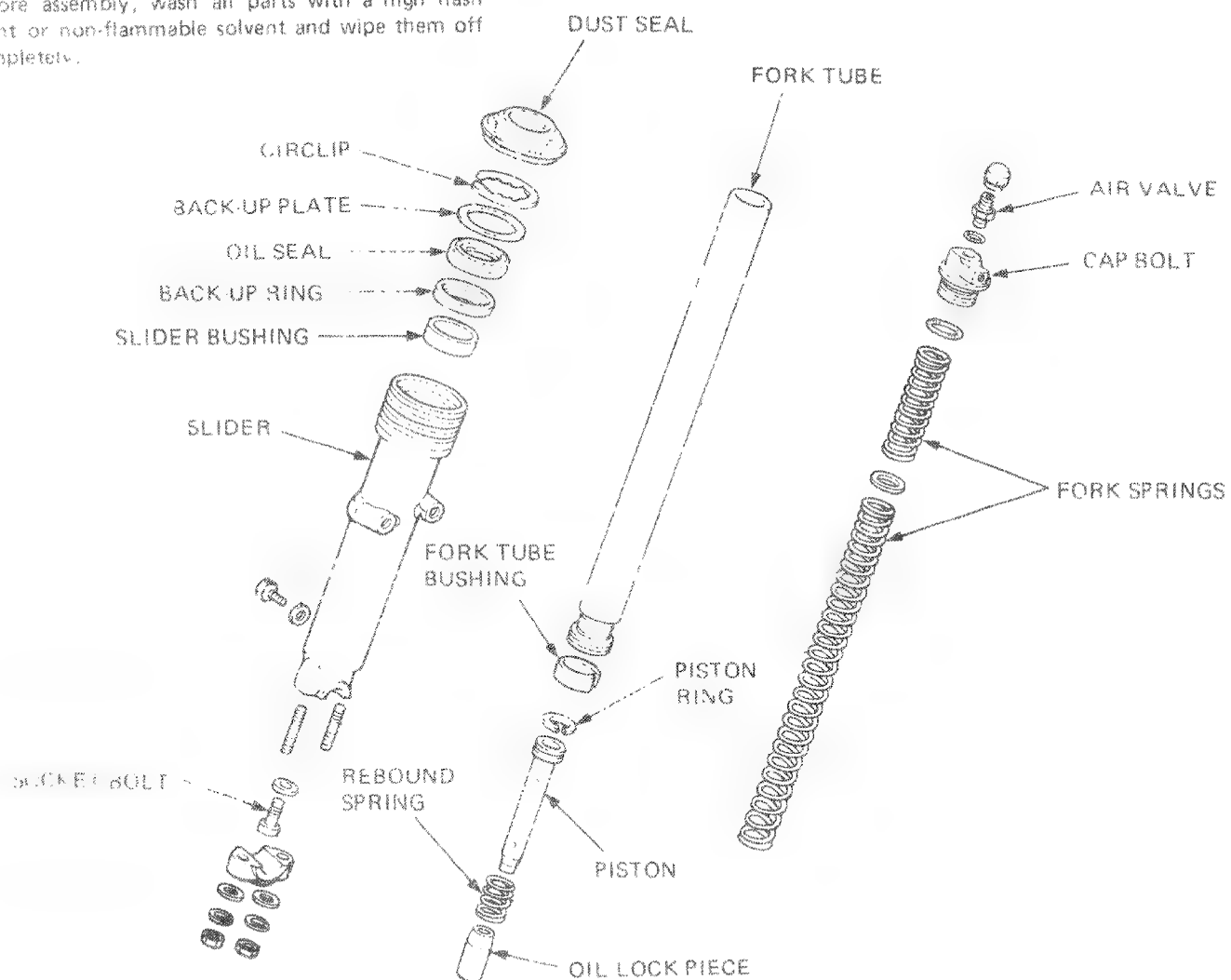
Visually inspect the slider and fork tube bushings. Replace the bushings if there is excessive scoring or scratching, or if the teflon is worn so that the copper surface appears on more than 3/4 of the entire surface.

Check the back-up ring; replace it if there is any distortion at the points shown.



### FRONT FORK ASSEMBLY

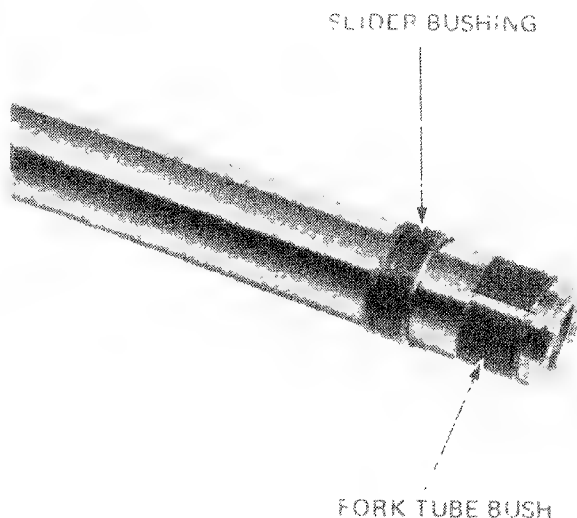
Before assembly, wash all parts with a high flash point or non-flammable solvent and wipe them off completely.







5. Slide the slider bushing on the fork tube if necessary.
6. Push the rebound spring and piston into the fork tube.
7. Push the lock piece on the end of the piston into the fork tube and the slider.

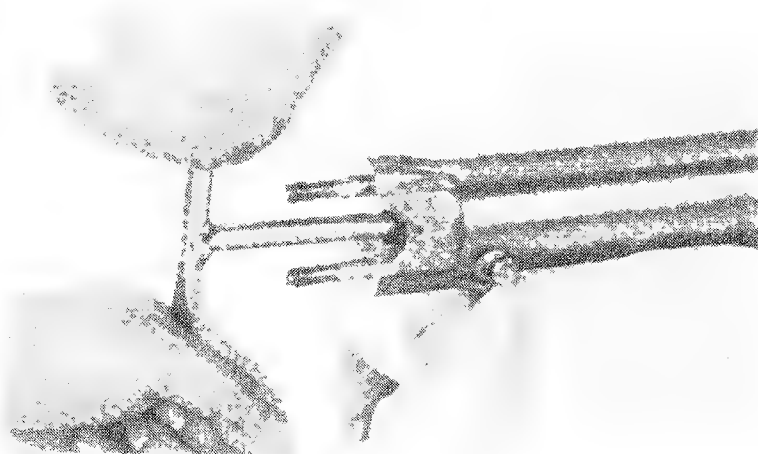


8. Place the fork slider in place with soft jaws.
9. Apply a locking agent to the socket bolt and thread.
10. Tighten the fork slider with a 6 mm hex wrench.

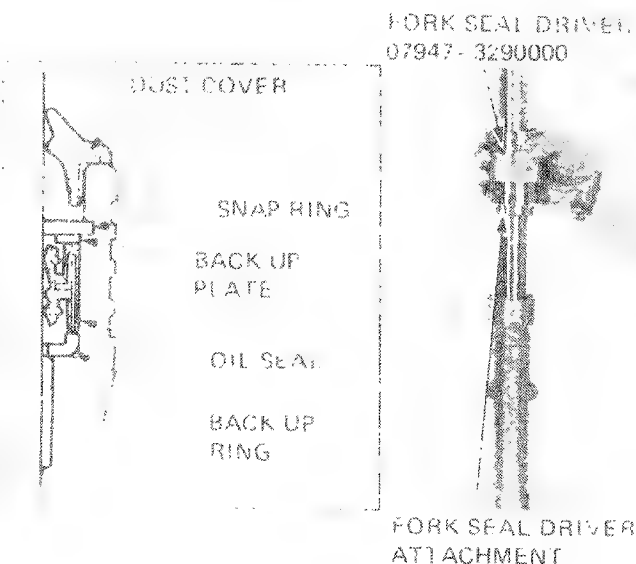
**NOTE**

Temporarily install the fork spring and fork cap and tighten the socket bolt.

**TORQUE** 15-25 N·m  
(1.5-2.5 kg-m, 11-18 ft-lb)



11. Slide the dust covering over the fork tube and rest it on the slider. Put the back-up ring and an old oil seal on the fork seal tool on top.
12. Push the tooling into place with the seal driver.
13. Remove the tooling.





Remove the back-up plate.  
Apply a new oil seal with ATF and install it with the seal driver and tap.

## NOTE

- When installing the oil seal, check the groove and top edge of the fork tube for burrs or scratches.
- Wrap the fork tube groove or top edge with masking tape to prevent damage to the oil seal lip.

Check the oil level with the seal driver.

## NOTE

- If additional seal depth is needed, install the back-up plate and repeat driving the seal in.

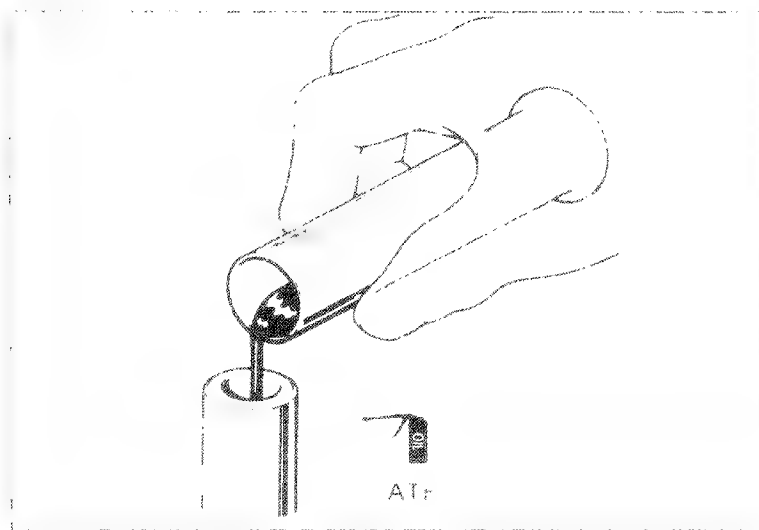
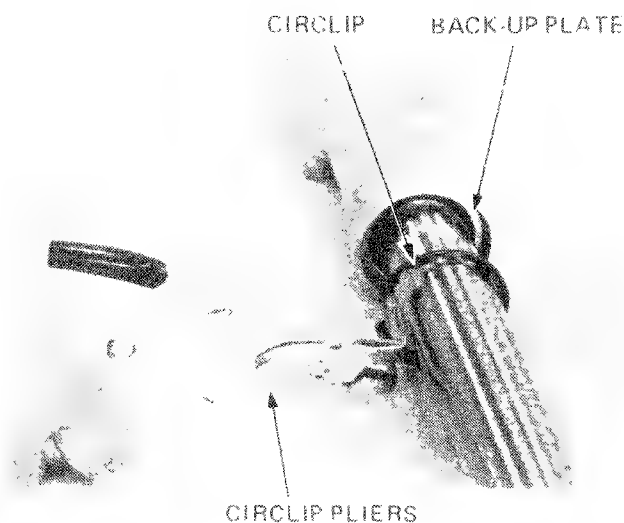
Remove the back-up plate, circlip and dust cover.

Pour the correct amount of ATF into the fork tube.

**CAPACITY** 210 cc (7.1 oz)

## NOTE

- Be sure the oil level is the same in both fork tubes.



Remove the fork springs and install them in the fork tube.

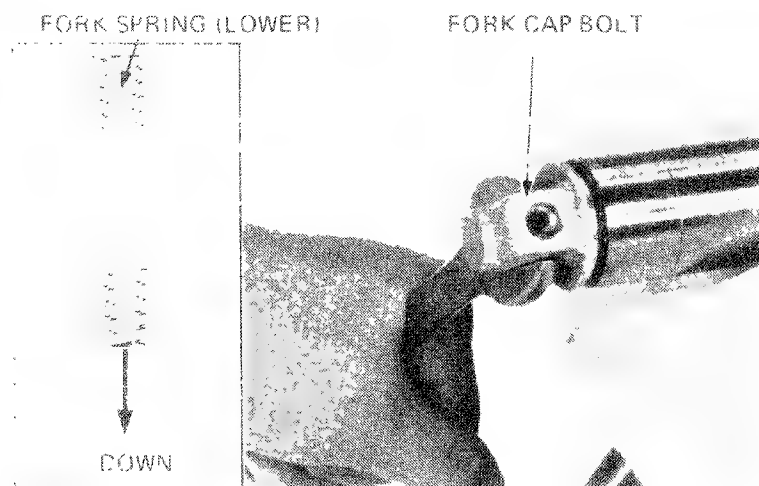
Adjust the torque for fork cap bolt.

**TIGHTEN** 15-30 N·m

(11-22 ft·lb)

## NOTE

- Push the fork tube in soft jaws, avoiding the seal surface.
- With the spring direction. If a narrow coil, push it in down.

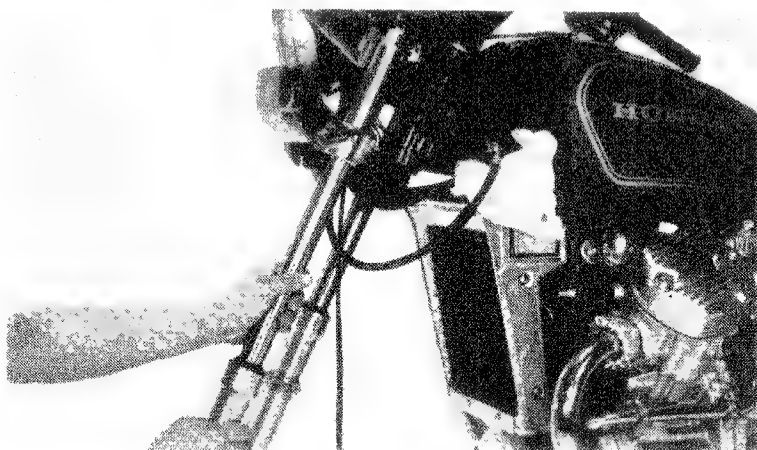




## FRONT FORK INSTALLATION

Install the fork tube in the fork bridge and steering stem.

Tighten the fork tube pinch bolts loosely.

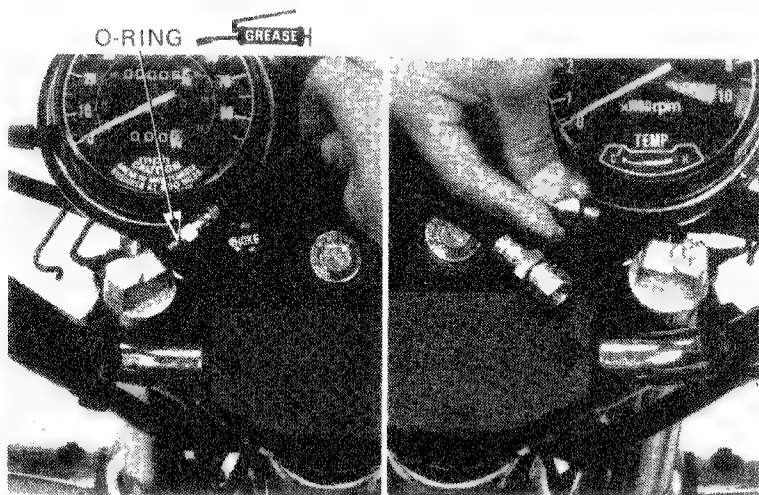


Apply grease to a new O-ring and install the air hose into the left fork cap bolt.

Apply grease to a new O-ring and install the connector into the right fork cap bolt.

**TORQUE:** 4–7 N·m

(0.4–0.7 kg-m, 3–5 ft-lb)



Loosen the fork tube pinch bolts.

Turn the fork tubes so that the air hose has a natural curve.

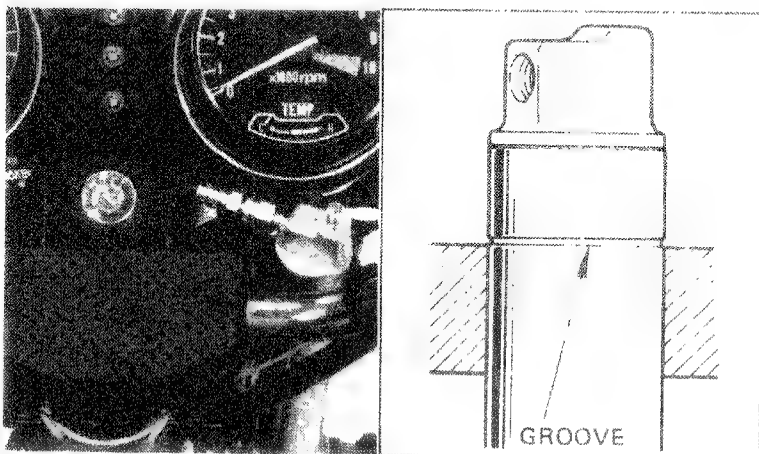
Attach the air hose to the connector and tighten the hose joint nut.

**TORQUE:** 15–20 N·m

(1.5–2.0 kg-m, 11–14 ft-lb)

Install the indicator panel cover.

Align the groove of each fork tube with the top surface of the fork bridge.





Install the fork bridge and steering stem pinch bolts.

## TORQUE

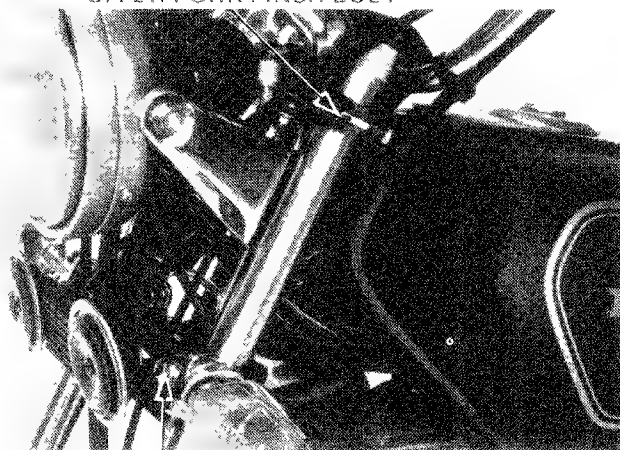
### FORK BRIDGE PINCH BOLT:

9–15 N·m (0.9–1.5 kg·m, 7–11 ft·lb)

### STEERING STEM PINCH BOLT:

30–40 N·m (3.0–4.0 kg·m, 22–29 ft·lb)

UPPER FORK PINCH BOLT



LOWER FORK PINCH BOLT

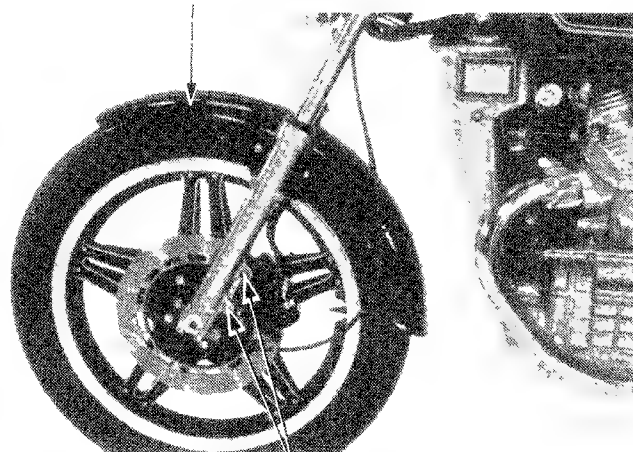
Install the front brake caliper.  
Tighten the caliper mount bolts.

## TORQUE

30–45 N·m  
(3.0–4.5 kg·m, 22–23 ft·lb)

Install the front fender and secure the brake hose  
to the front wheel (Page 13-11).

FRONT FENDER



CALIPER MOUNTING BOLTS

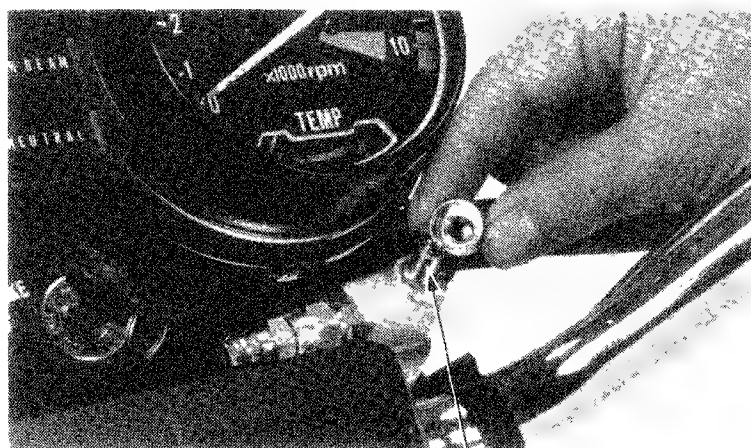
Make sure all weight is off the front wheel, and  
pump the forks with air.

## RECOMMENDED PRESSURE:

80–120 kPa (0.8–1.2 kg/cm<sup>2</sup>, 11–17 psi)

## CAUTION

Do not use dome low pressure pump to  
pump the forks. Excessive pressure can  
damage the fork tube components.



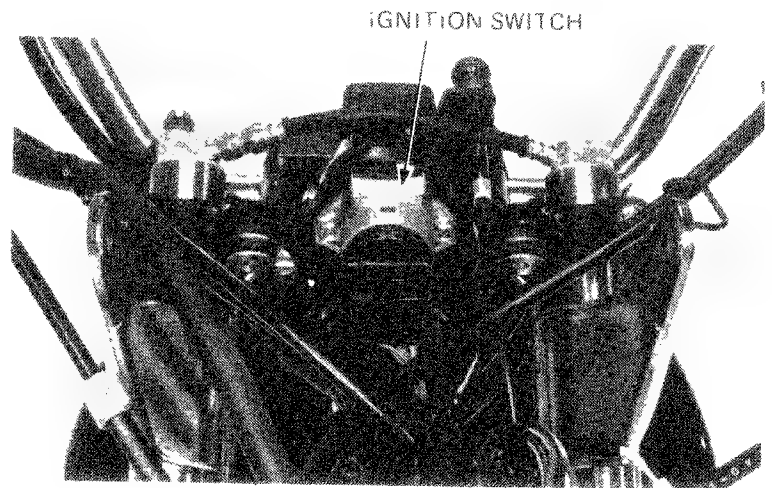
AIR VALVE



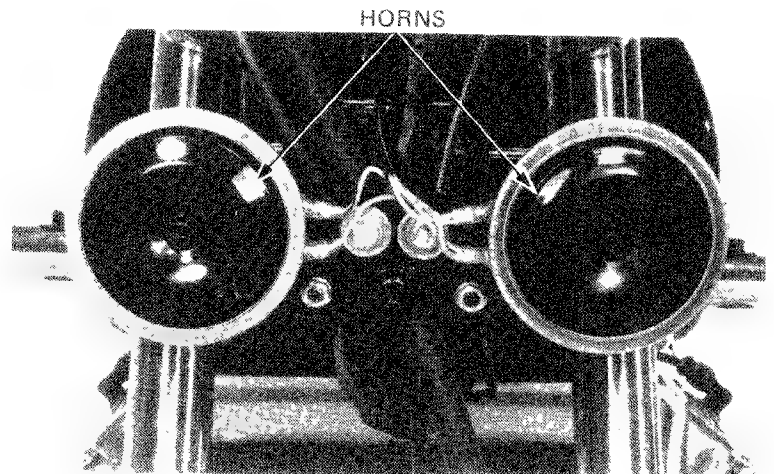
## STEERING STEM

### STEERING STEM REMOVAL

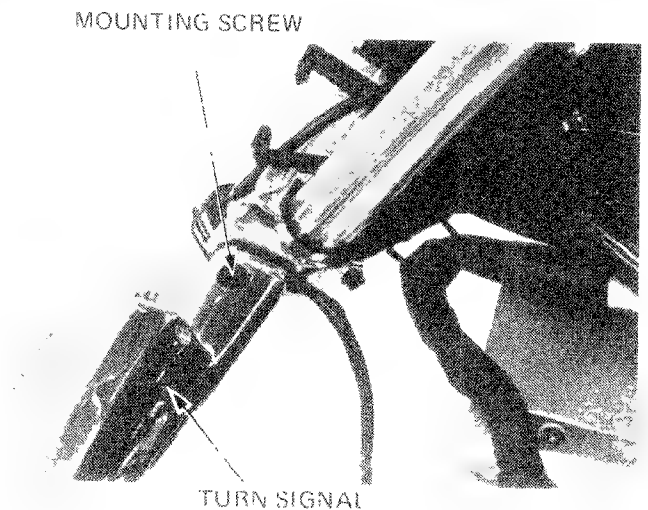
- Remove the headlight case (Page 13-3).
- Remove the instruments (Page 13-4)
- Remove the handlebar (Page 13-4)
- Remove the headlight case bracket and the ignition switch



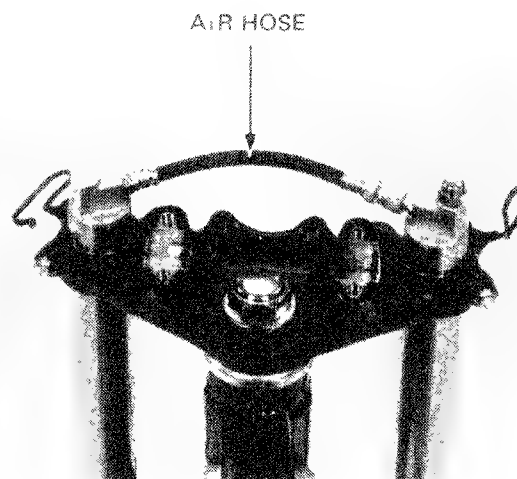
- Remove the horn cover.
- Remove the horns and horn bracket from the steering stem.



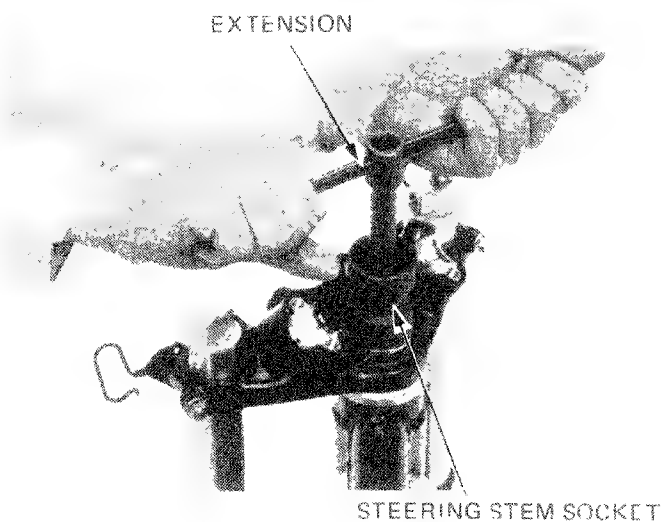
- Remove the right and left turn signals.



2. Reconnect the fork air hose (Page 13-12).



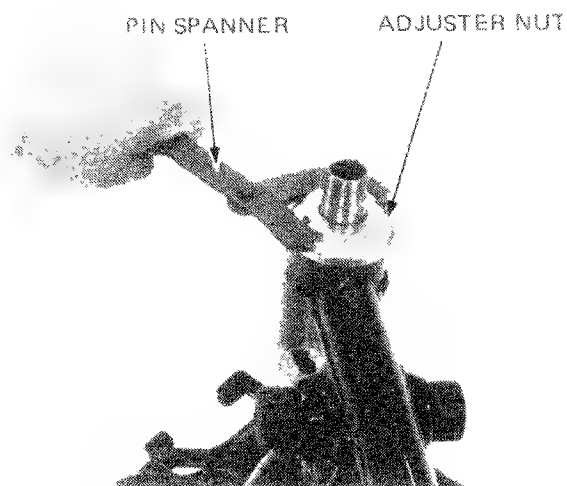
Remove the steering stem nut.  
Loosen the pinch bolts and remove the fork bridge and front forks.



Remove the steering stem adjuster nut.

## NOTE

Hold the steering stem to prevent the steel balls and the stem from falling.





Remove the top cone race and upper bearing steel balls.

Remove the steering stem and lower bearing steel ball.



### BEARING INSPECTION

Check the upper and lower bearing race surfaces for wear or damage and replace if necessary.



### BOTTOM CONE RACE REPLACEMENT

Remove the bottom cone race with a hammer and a drift.







1. Remove the dust seal and dust seal.
2. Install the new cone race into place.



STEERING STEM DRIVER  
07946-3710400 or 07946-3710601



### BALL RACE REPLACEMENT

1. Remove the top and bottom ball races and replace if worn or damaged.
2. Drive in the top ball race and then drive in the bottom ball race.

#### NOTE

Always remove the top ball race before driving in the bottom ball race.

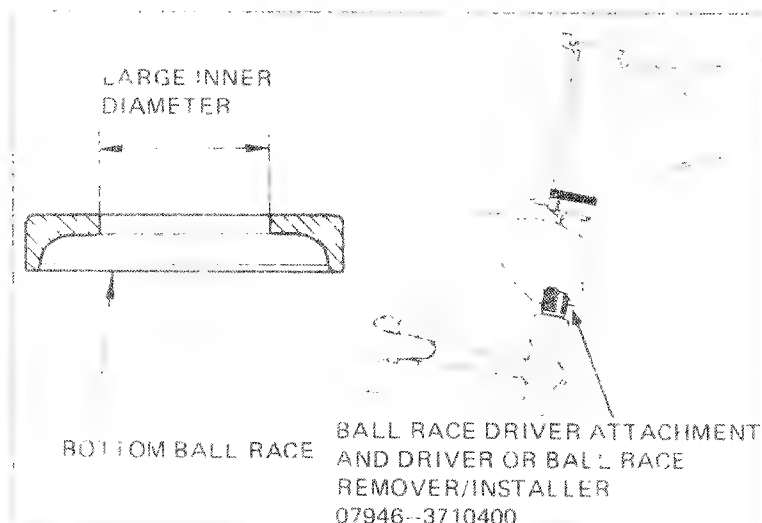


BALL RACE REMOVER INSTALLER  
07946-3710400

1. Install the bottom ball race.

#### NOTE

The bottom ball race has a larger I.D. than the top ball race. Be sure to install the races in their proper places.



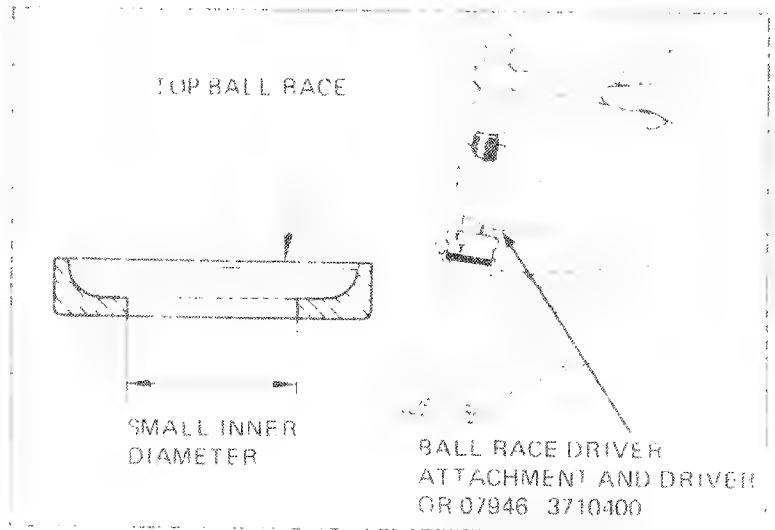
BOTTOM BALL RACE  
BALL RACE DRIVER ATTACHMENT AND DRIVER OR BALL RACE REMOVER/INSTALLER  
07946-3710400



#### TOP BALL RACE

##### NOTE

Push the ball race in squarely until they seat.

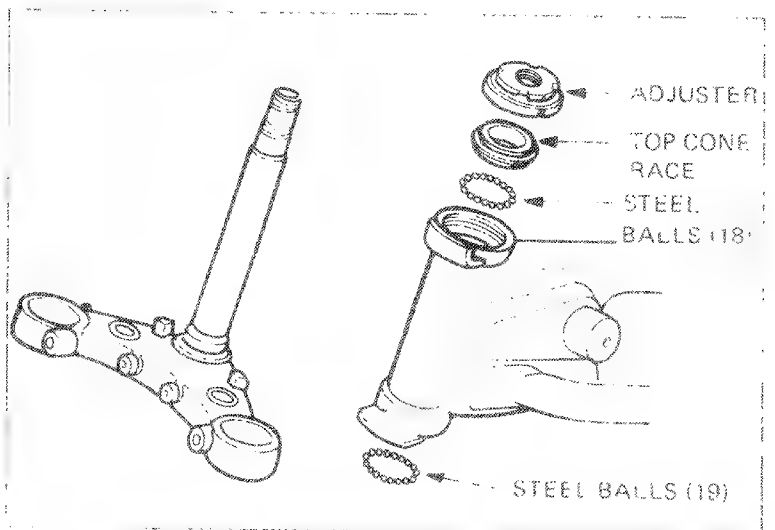


#### STEERING STEM INSTALLATION

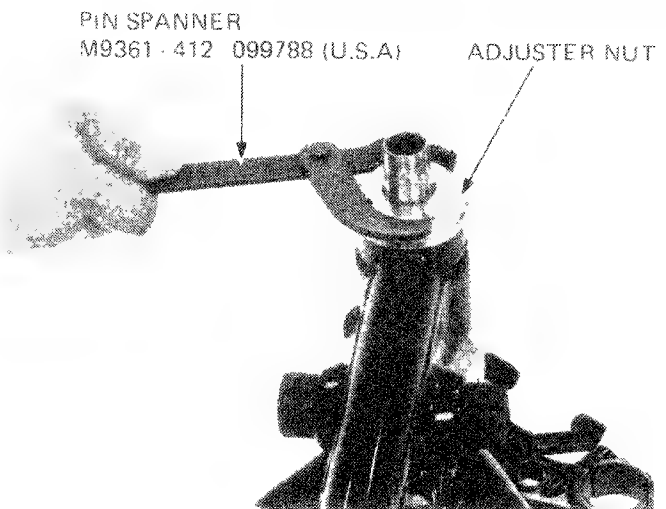
Grease the top race and install 18 steel balls.  
Grease the lower cone race and install 19 steel balls.

##### NOTE

Do not allow the balls to fall.



Slide the adjuster nut on the frame neck and tighten it until snug against the top cone race. Then back it out 1/8 turn. Make sure that there is no vertical movement and that the stem rotates freely.





## FRONT WHEEL/SUSPENSION

### Remove the fork legs

#### NOTE:

Do not interchange the right and left fork legs.

Remove the fork tubes by tightening the fork pinch bolts.

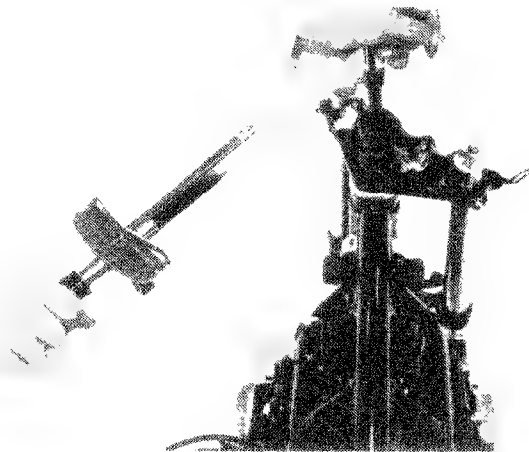
Remove the fork legs.

Remove the master and steering nut on the steering stem.

Remove the nut.

**TORQUE: 90–120 N·m**

(9.0–12.0 kg·m, 65–87 ft·lb)



Install the fork air hose (Page 13-19).

Align the groove of each fork tube so that it is flush with the top of the fork bridge.

Tighten the pinch bolts.

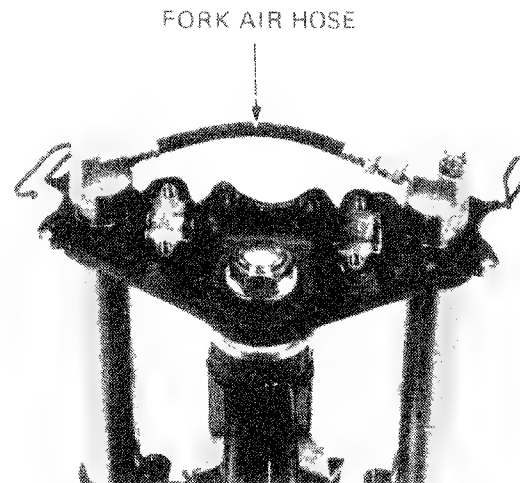
**TORQUE:**

**FORK BRIDGE PINCH BOLT:**

4–15 N·m (0.9–1.5 kg·m, 7–11 ft·lb)

**STEERING STEM PINCH BOLT:**

30–40 N·m (3.0–4.0 kg·m, 22–29 ft·lb)



Install the removed parts in the reverse order of removal.

Front wheel (Page 13-11).

Headlamp (Page 13-5).

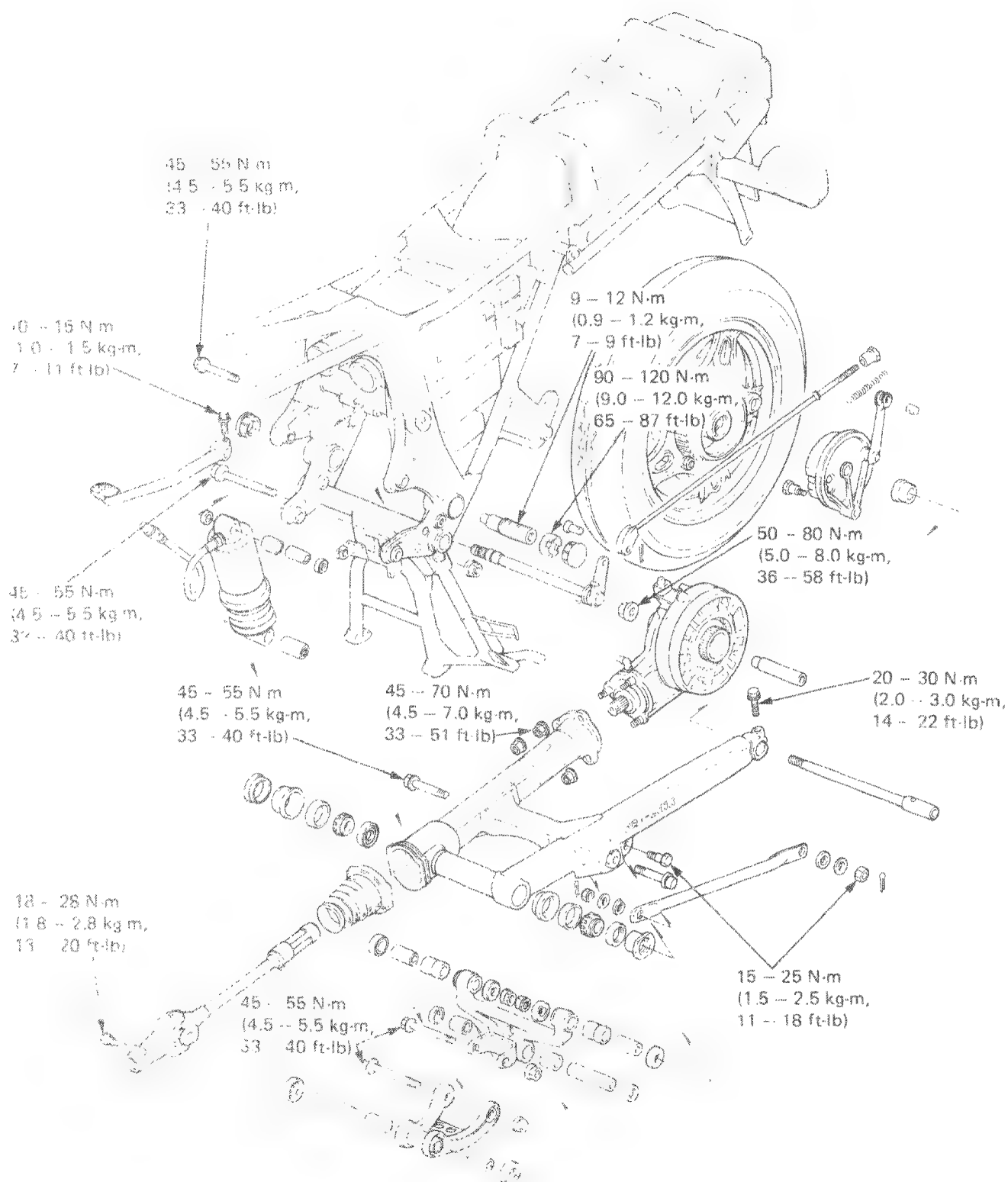
Master cylinder (Page 13-3).



**HONDA**  
GL500  
GL500 INTERSTATE

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MEMO





## 14. REAR WHEEL/BRAKE/ FINAL DRIVE/SUSPENSION

|                       |        |
|-----------------------|--------|
| SERVICE INFORMATION   | 14-1   |
| TROUBLESHOOTING       | 14-2   |
| REAR WHEEL/REAR BRAKE | 14-3   |
| SHOCK ABSORBER        | 14--10 |
| SWINGARM/DRIVESHAFT   | 14--16 |
| SUSPENSION LINKAGE    | 14--25 |
| FINAL DRIVE           | 14-27  |

## SERVICE INFORMATION

## GENERAL INSTRUCTIONS

- **DISC STAR** wheels are not serviceable. If either the spokes, rim or hub are damaged the entire wheel must be replaced. Never ride on the spokes.
- Tubeless tire removal, repair and remounting procedures are covered in the Tubeless Tire Manual.
- Before installing the rear wheel, apply MULTIPURPOSE NLGI No. 2 Grease (Molybdenum disulfide additive) to the final driven flange and splines on the final drive shaft.
- Take care not to damage the body when removing and installing the shock absorber.
- Perform the following inspections when reassembling the final gear case:
  - Pinion gear preload
  - Final gear assembly preload
  - Gear backlash
  - Chain contact

 **WARNING**

Brake dust may contain asbestos which can be harmful to your health. Do not use compressed air to clean the brake drum or brake panel. Use a vacuum with a sealed dust collector. Wear a protective face mask and thoroughly wash your hands when finished!

Use only genuine rear suspension linkage and shock absorber pivot/mount bolts. Others may not have adequate strength. Note the installation direction of the bolts.

000000

|                           |                        |                                      |               |
|---------------------------|------------------------|--------------------------------------|---------------|
| Common                    |                        | Common                               |               |
| Retainer wrench           | 07965-MA10100          | Retainer wrench B                    | 07710-0010200 |
| Attachment                | 07965-MA10200          | Retainer wrench body                 | 07710-0010401 |
| Attachment                | 07908-4690001 or       | Attachment 42 x 47 mm                | 07746-0010300 |
|                           | KS-HBA-08-469 (U.S.A.) | Pilot 15 mm                          | 07746-0040300 |
| Speed bearing remover set | 07936-8890100          | Pin driver 3.5 mm                    | 07744-0010300 |
| Speed bearing remover     | 07936-8890300          | Attachment 37 x 40 mm                | 07746-0010200 |
| Bearing remover handle    | 87936-3710100          | Bearing driver handle A              | 07749-0010000 |
| Bearing driver weight     | 07936-3710200          | Extension                            | 07716-0020500 |
| Speed remover wrench      | 07910-3710000          | Pilot 30 mm                          | 07746-0040700 |
| Speed assembly tool set   | 07965-4150001          | Bearing driver attachment 52 x 55 mm | 07746-0010400 |
| Speed assembly tool       | 07965-3710100          | Socket bit 17 mm                     | 07703-0020500 |
| Speed joint center punch  | 07965-4150100          |                                      |               |
| Speed driver attachment   | 07945-4150200          |                                      |               |
| Speed                     | 07945-3710200          |                                      |               |
| Speed bit                 | 07973-MA10100          |                                      |               |
| Speed bit                 | 07973-MA10200          |                                      |               |
| Speed joint center punch  | 07910-MA10100 or       |                                      |               |
|                           | 07910-4150000          |                                      |               |
| Speed inspection tool     | 07998-4150000          |                                      |               |
| Speed joint attachment    | 07934-MA10100          |                                      |               |
| Speed joint               | 07934-MA10200          |                                      |               |

equivalent tools commercially available in U.S.A.

## REAR WHEEL/BRAKE/FINAL DRIVE/ SUSPENSION



**HONDA**  
GL500  
GL500 INTERSTATE

### TORQUE VALUES

|                                   |                                         |
|-----------------------------------|-----------------------------------------|
| Shock absorber mount bolts        | 45-55 N·m (4.0-5.5 kg-m, 33-40 ft-lb)   |
| Shock absorber linkage pivot bolt | 45-55 N·m (4.0-5.5 kg-m, 33-40 ft-lb)   |
| Swingarm nut                      | 50-80 N·m (5.0-8.0 kg-m, 36-58 ft-lb)   |
| Final drive pinion nut            | 20-30 N·m (2.0-3.0 kg-m, 14-22 ft-lb)   |
| Swingarm pivot pin                | 9-12 N·m (0.9-1.2 kg-m, 7-9 ft-lb)      |
| Swingarm pivot fork nut           | 90-120 N·m (9.0-12.0 kg-m, 65-87 ft-lb) |
| Pinion gear case nut              | 45-70 N·m (4.5-7.0 kg-m, 33-51 ft-lb)   |
| Pinion gear oil seal nut          | 18-28 N·m (1.8-2.8 kg-m, 13-20 ft-lb)   |
| Brake stopper pin bolt nut        | 15-25 N·m (1.5-2.5 kg-m, 11-18 ft-lb)   |
| Brake linkage pin nut             | 10-15 N·m (1.0-1.5 kg-m, 7-11 ft-lb)    |

### SPECIFICATIONS

| ITEM                             | STANDARD                      | SERVICE LIMIT                                           |
|----------------------------------|-------------------------------|---------------------------------------------------------|
| Shock absorber                   |                               | 0.2 mm (0.008 in)                                       |
| Rear wheel runout                | Radial                        | 2.0 mm (0.08 in)                                        |
|                                  | Axial                         | 2.0 mm (0.08 in)                                        |
| Brake lining thickness           | 4.9-5.0 mm (0.19-0.20 in)     | 2.0 mm (0.08 in)                                        |
| Rear brake drum I.D.             | 160.0 mm (6.06 in)            | 161 mm (6.34 in)                                        |
| Backlash                         | 0.08-0.18 mm (0.003-0.077 in) | 0.25 mm (0.010 in)                                      |
|                                  | Backlash difference           | 0.10 mm (0.004 in)                                      |
| Pinion gear                      | Pinion gear preload           | 0.4-0.5 N·m<br>(4.0-5.0 kg-cm, 3.48-4.32 in-lb)         |
|                                  | Assembly preload              | 0.6-0.9 N·m<br>(6.0-9.0 kg-cm, 5.16-7.80 in-lb)         |
|                                  | Final gear oil capacity       | 160-180 cc (5.4-6.1 oz)                                 |
| Rear shock absorber oil capacity | 669 cc (22.6 oz)              |                                                         |
| Rear shock absorber air pressure | GL500                         | 0-500 kPa<br>(0-5.0 kg/cm <sup>2</sup> , 0-70 psi)      |
|                                  | GL500I                        | 100-500 kPa<br>(1.0-5.0 kg/cm <sup>2</sup> , 14-70 psi) |

## TROUBLESHOOTING

### Wobble or Vibration

1. Distorted rim
2. Loose wheel bearing
3. Loose or distorted spokes
4. Bent axle
5. Loose axle

### Soft Suspension

1. Loose spring
2. Shock absorber improperly adjusted
3. Weak air damper

### Hard Suspension

1. Shock absorber improperly adjusted

### Suspension Noise

1. Shock absorber noise
2. Loose bearings

### Poor Brake Performance

1. Improper brake adjustment
2. Fouled brake linings
3. Worn brake shoes
4. Worn brake shoe cam contacting faces
5. Worn brake drum
6. Improper engagement between brake arm and shaft serrations

### Final drive gear noise

1. Oil level too low
2. Excessive backlash
3. Drive shaft splines damaged or worn
4. Insufficient lubricant

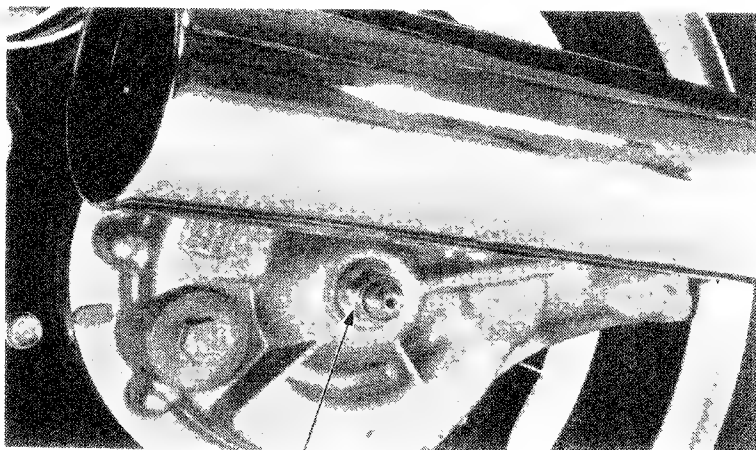




## REAR WHEEL/BRAKE

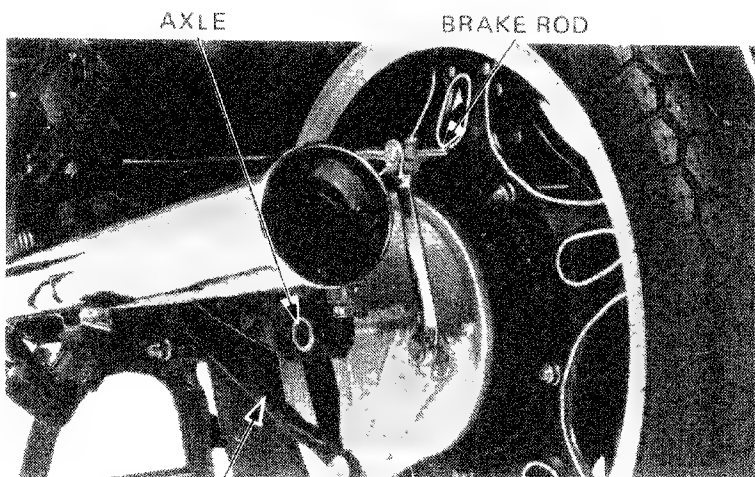
### REAR WHEEL REMOVAL

Place the motorcycle on its center stand.  
Loosen the axle nut



AXLE NUT

Remove the axle pinch bolt.  
Remove the cotter pin and remove the brake stop  
per arm from the brake panel.  
Remove the brake adjusting nut and the brake rod.  
Remove the rear axle.

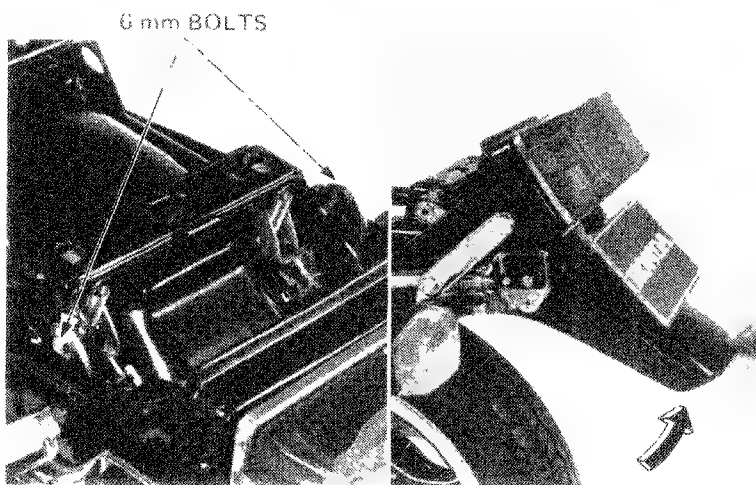


AXLE

BRAKE ROD

STOPPER ARM

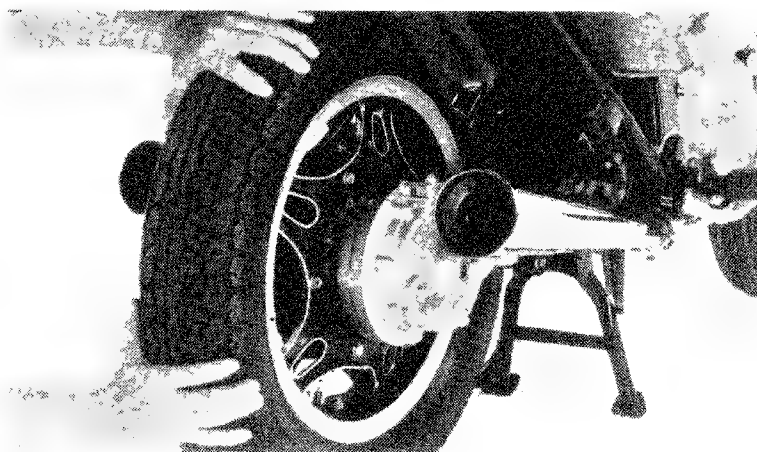
Remove the seat.  
Remove the two 6 mm bolts and pull the rear fender  
down.



6 mm BOLTS



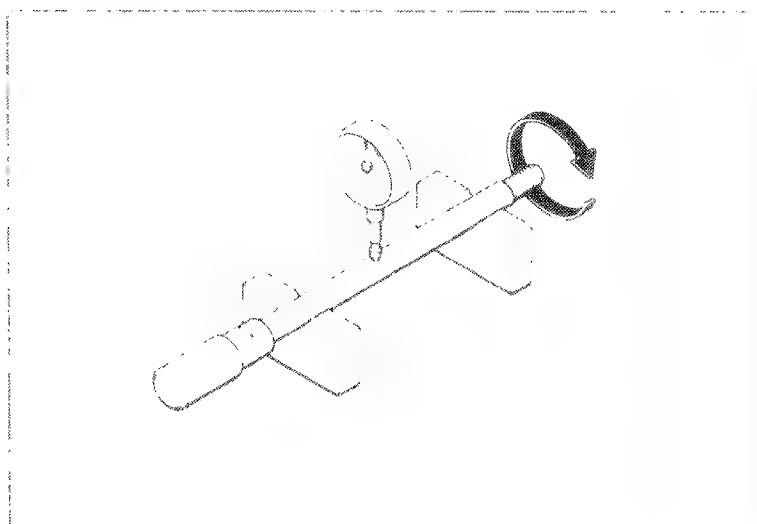
Push the rear wheel toward the left away from the final drive gear and then remove the wheel with the brake panel by pulling it backward.



### AXLE INSPECTION

Set the axle shaft in V-blocks and measure the runout. The actual runout is 1/2 of the total indicator reading.

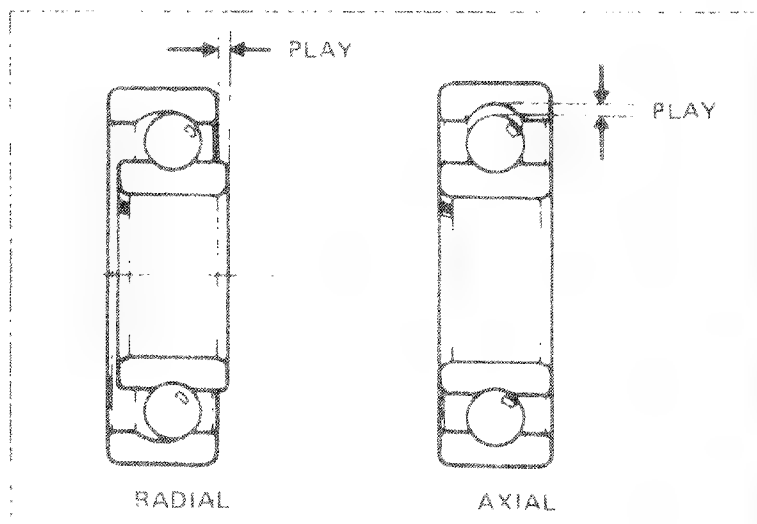
**SERVICE LIMIT: 0.20 mm (0.008 in.)**



### REAR WHEEL BEARING INSPECTION

Rotate the rear wheel bearing by hand.

Replace the wheel bearings with new ones if they are noisy or have excessive play.





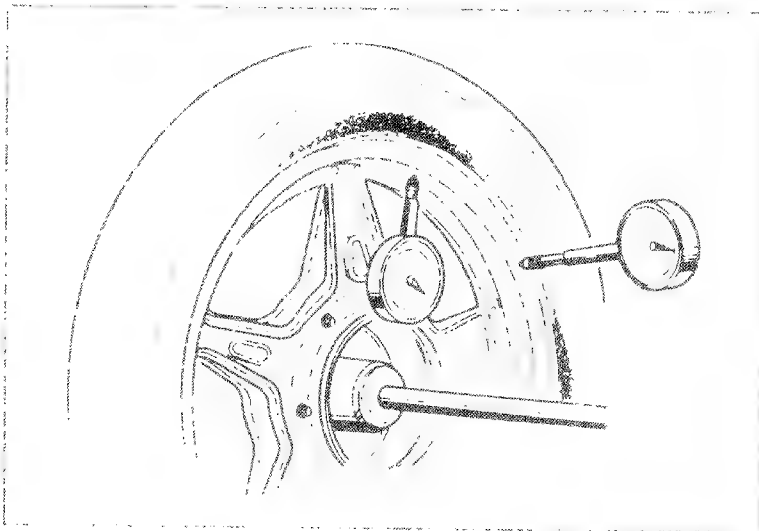
### REAR WHEEL RIM RUNOUT INSPECTION

Place the wheel in a truing stand. Spin the wheel slowly and measure the runout with a dial indicator.

#### SERVICE LIMITS:

RADIAL RUNOUT: 2.0 mm (0.08 in)

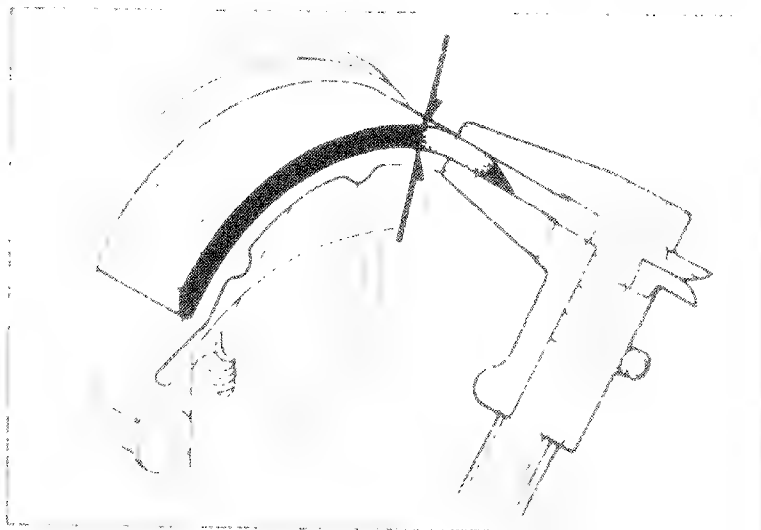
AXIAL RUNOUT: 2.0 mm (0.08 in)



### BRAKE LINING THICKNESS INSPECTION

Measure the brake lining thickness.

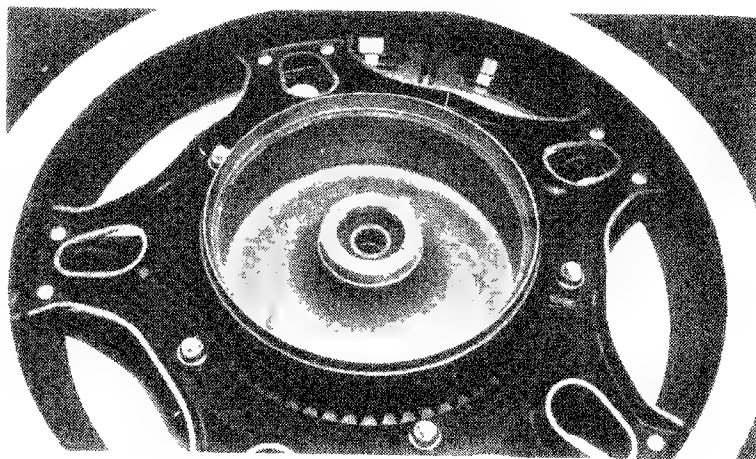
SERVICE LIMIT: 2.0 mm (0.08 in)



### BRAKE DRUM I.D. INSPECTION

Measure the brake drum inside diameter.

SERVICE LIMIT: 161 mm (6.34 in)



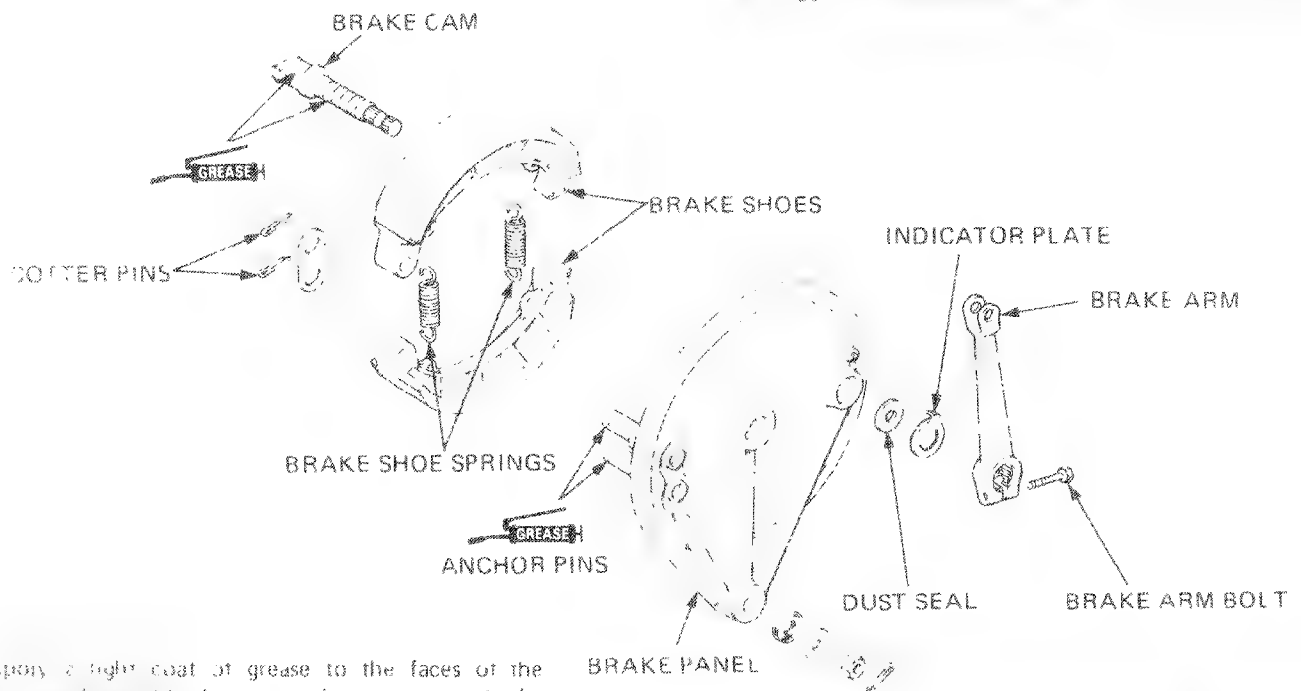
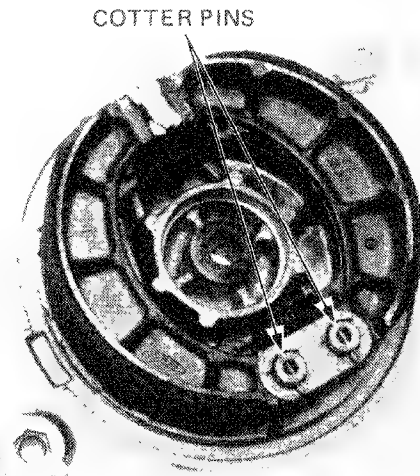


## BRAKE SHOE REPLACEMENT

- Remove the brake arm.
- Remove the cotter pins.
- Remove the brake shoes and springs.

### WARNING

Keep grease off the brake linings. Wipe excess grease off the cam and anchor pins. If grease gets on the brake linings the stopping power will be reduced.



Apply a light coat of grease to the faces of the anchor pins and brake cam and groove in the brake panel.

Install the dust seal.

Install the wear indicator plate.

### NOTE

Align the indicator plate tab with the brake cam cut-out.

Install the brake arm on the brake cam.

### NOTE

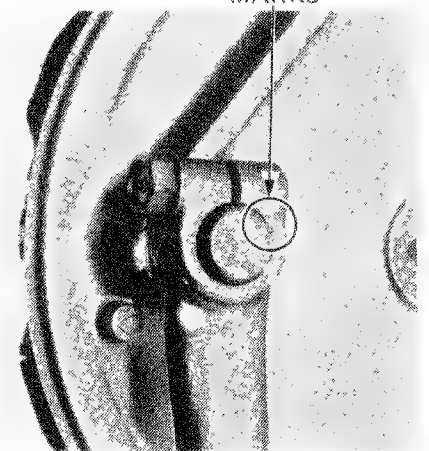
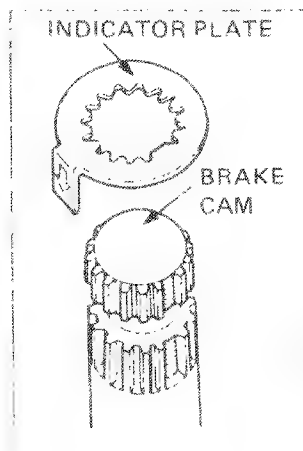
Align the punch marks.

Tighten the brake arm bolt.

**TORQUE:** 10–14 N·m (1.0–1.4 kg-m, 7–10 ft-lb)

Install the brake shoes and springs.

Install the cotter pins.





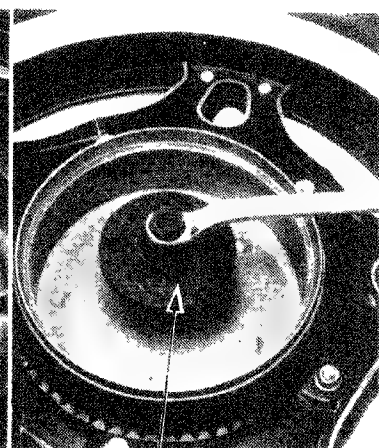
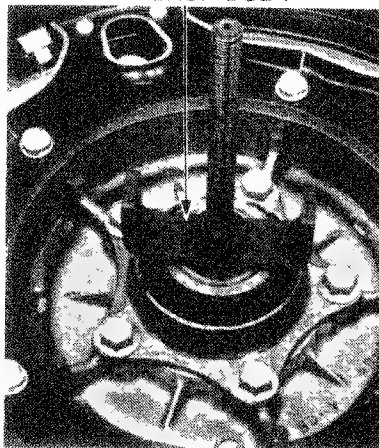
## REAR WHEEL DISASSEMBLY

1. Remove the bearing retainer.
2. Remove the final driven flange.
3. Remove the bearings and distance collar from the rear wheel hub.

### NOTE

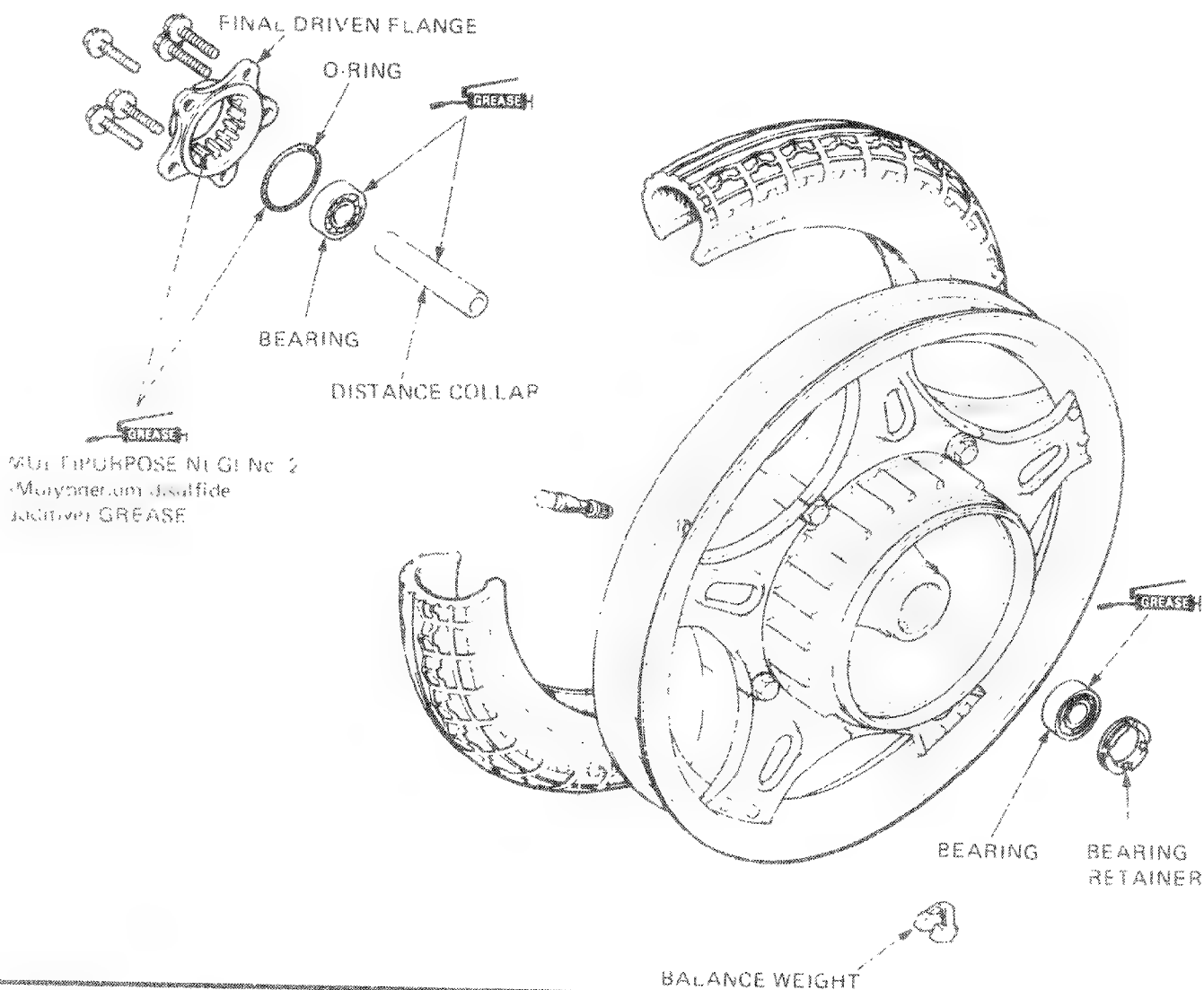
If the bearings are removed, replace them with new bearings during assembly.

RETAINER  
WRENCH BODY



RETAINER WRENCH  
ATTACHMENT

## REAR WHEEL ASSEMBLY

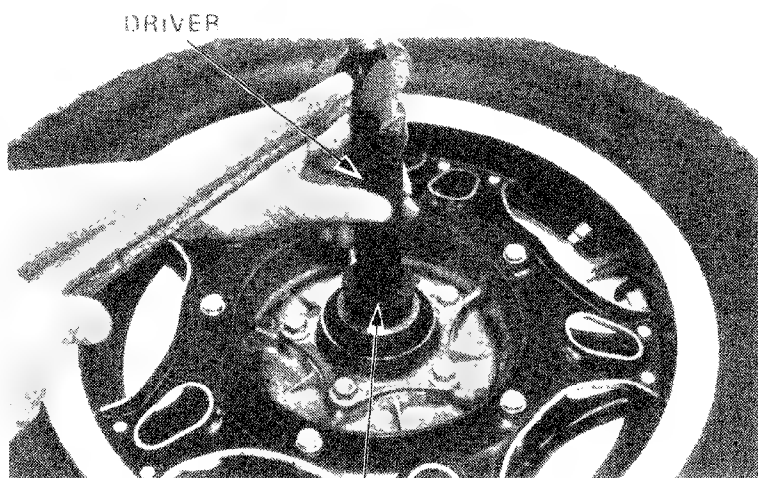




Pack all bearing cavities with grease and drive in the bearing with a bearing driver.  
Drive the left (retainer side) bearing first.

### CAUTION

Drive the bearings in squarely with the sealed end facing out making sure they are fully seated.

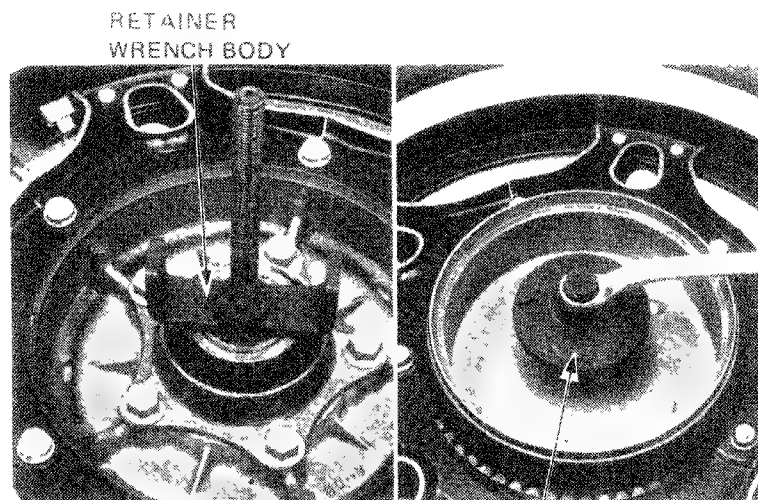


DRIVER  
ATTACHMENT 42 x 47 mm  
AND PILOT 15 mm

Install the bearing retainer with the retainer wrench from the retainer to the hub.

### NOTE

Check the condition of the bearing retainer. Replace the retainer if the threads are damaged.

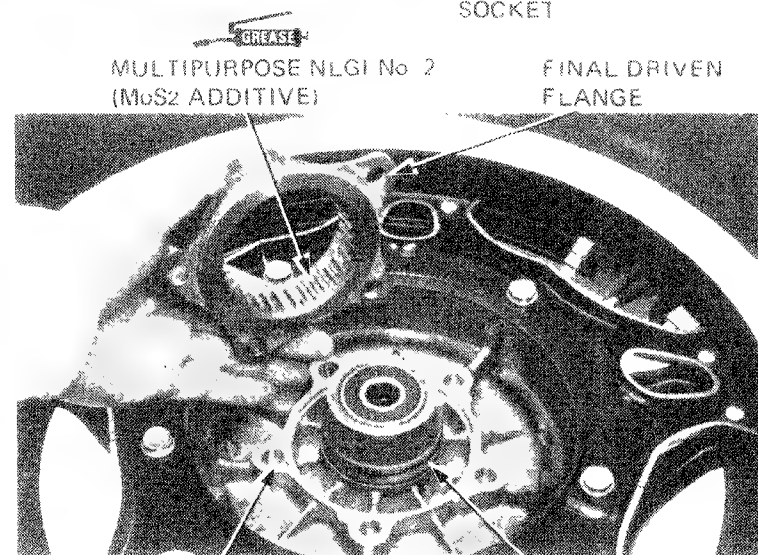


RETAINER  
WRENCH BODY

RETAINER WRENCH  
SOCKET

Install the O-ring. Lubricate the splines of the final driven flange and the O-ring with lithium-based MULTIPURPOSE NLGI No. 2 (molybdenum disulfide additive) GREASE.

Apply liquid sealant to the final driven flange and the wheel hub mating surfaces.



GREASE  
MULTIPURPOSE NLGI No. 2  
(MoS<sub>2</sub> ADDITIVE)

FINAL DRIVEN  
FLANGE

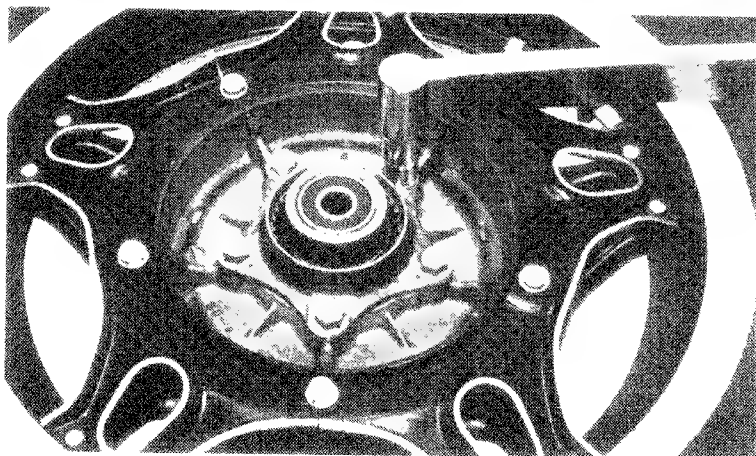
SEALING AGENT

O-RING



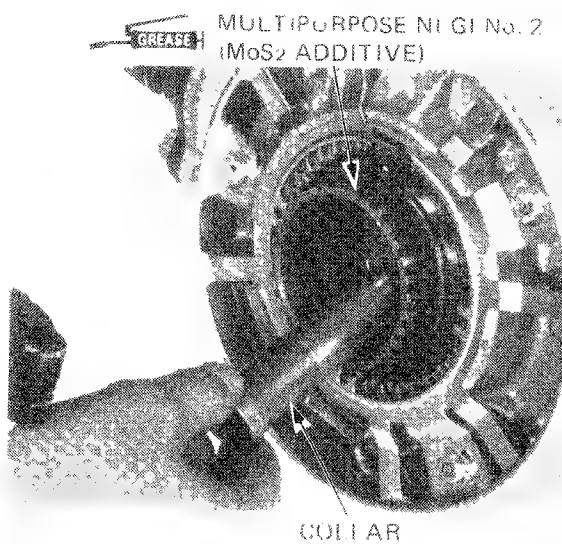


Install the final drive flange and torque the bolts.  
TORQUE: 40–50 N·m  
(4.0–5.0 kg·m, 29–36 ft·lb)

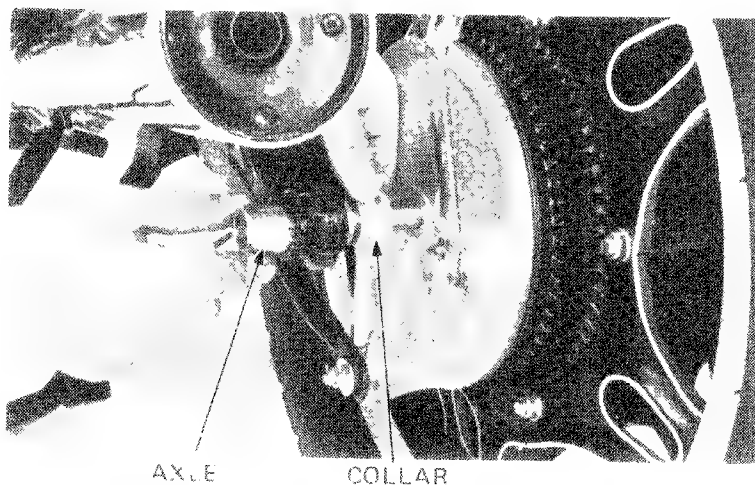


### REAR WHEEL INSTALLATION

Apply MULTIPURPOSE NLGI No. 2 (Molybdenum  
additive additive) GREASE to the final driven  
flange splines of the rear wheel and ring gear.  
Insert the distance collar into the final gear case in  
the direction shown.



Install the rear wheel and brake panel.  
Insert the rear axle through the swingarm, washer,  
brake panel and rear wheel.





## REAR WHEEL/BRAKE/FINAL DRIVE/ SUSPENSION



**HONDA**  
GL500  
GL500 INTERSTATE

Install the brake torque link and tighten the nut.

**TORQUE:** 15–25 N·m

(1.5–2.5 kg·m, 11–18 ft·lb)

Install the new cotter pin to the torque link bolt.

Tighten the axle pinch bolt.

**TORQUE:** 50–80 N·m

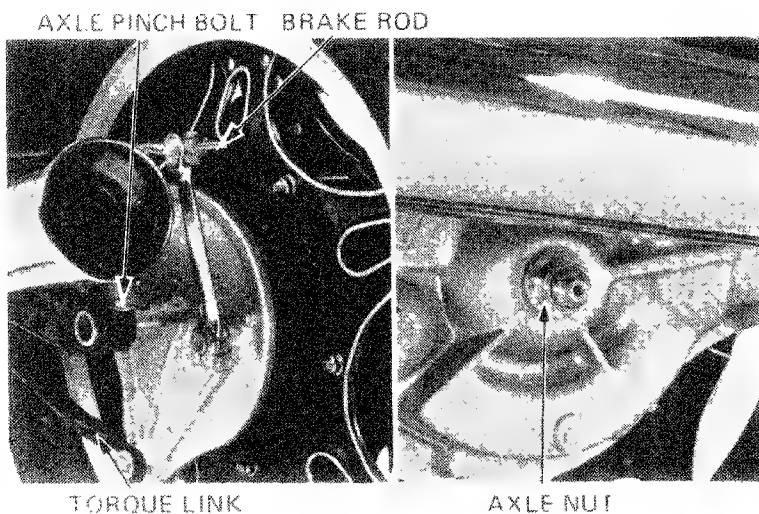
(5.0–8.0 kg·m, 36–58 ft·lb)

Enter the axle pinch bolt.

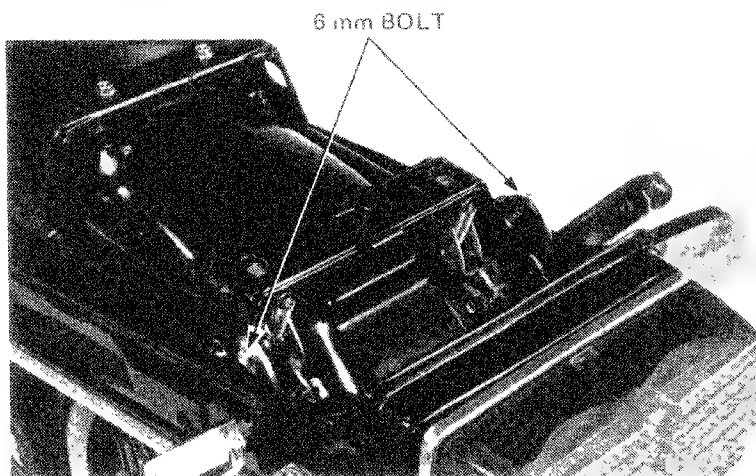
**TORQUE:** 20–30 N·m

(2.0–3.0 kg·m, 14–22 ft·lb)

Connect the brake rod and adjust rear brake pedal  
for play (Page 3-13).



Tighten the rear fender bolts and install the seat.



## SHOCK ABSORBER

### REMOVAL

#### NOTE

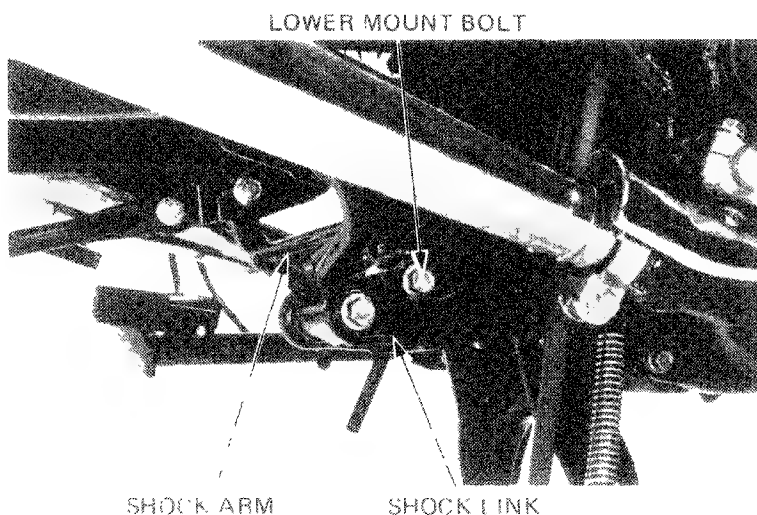
The shock absorber can be removed without  
removing the air cleaner case.

Place the motorcycle on the center stand.

Remove the muffler.

Remove the shock absorber lower mount bolt.

Remove the shock arm and shock link (Page 14-25).



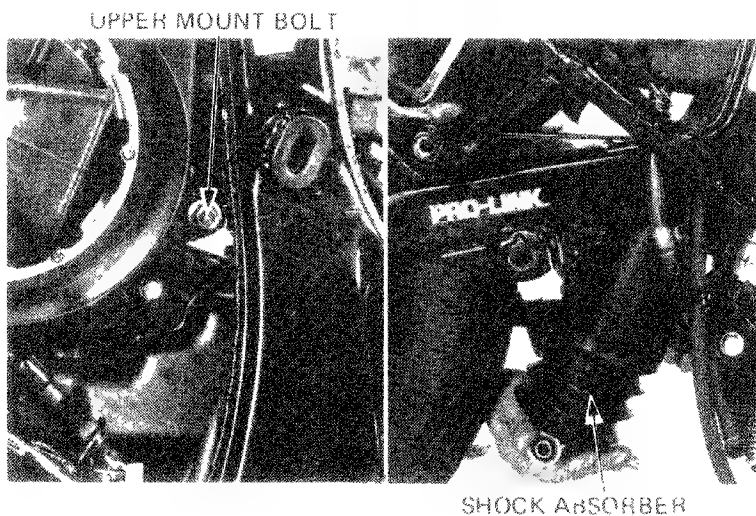


Disconnect the air hose from the hose clamp.  
Remove the shock absorber upper mount bolt.

**NOTE**

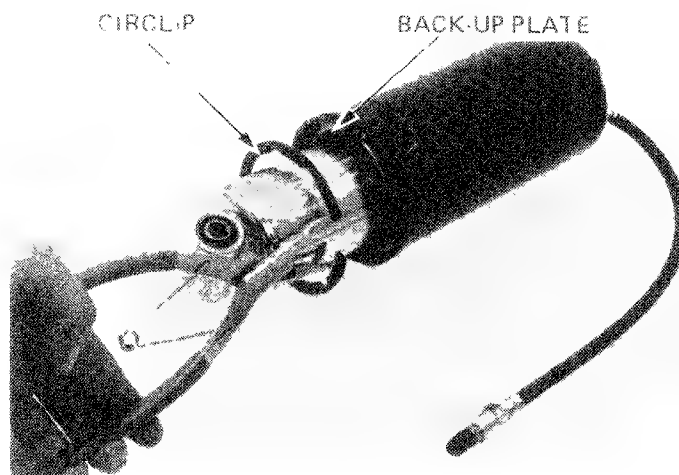
Hold the shock absorber to prevent it from  
falling.

Remove the shock absorber.

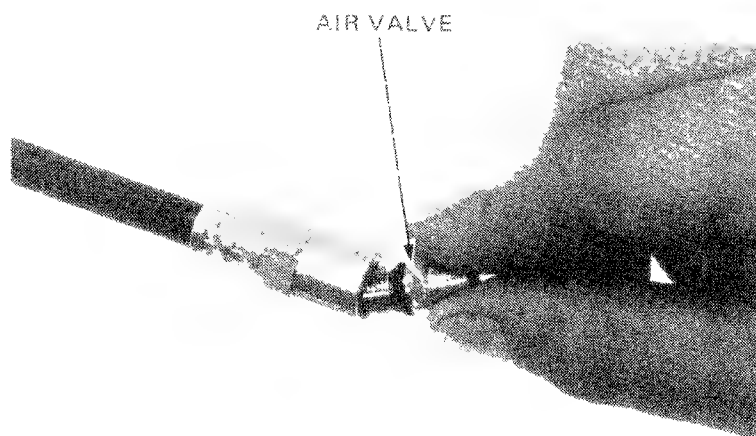


**OIL SEAL REPLACEMENT**

Remove the boot band and boot.  
Remove the circlip and back-up plate.



Release air pressure and remove the air valve from  
the hose.



## REAR WHEEL BRAKE/FINAL DRIVE/ SUSPENSION

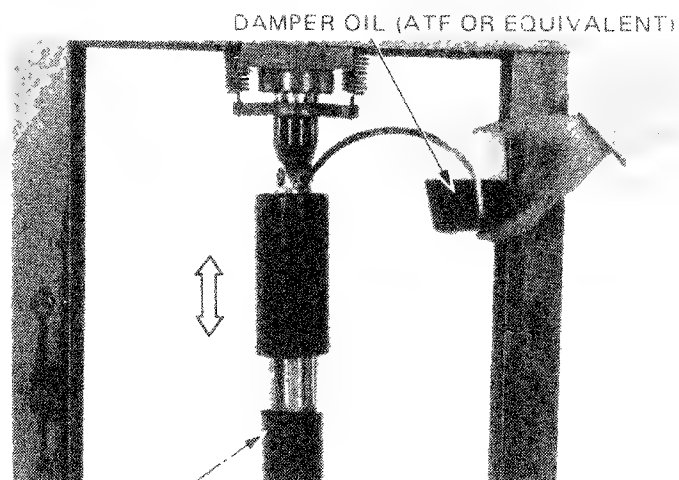


**HONDA**  
GL500  
GL500 INTERSTATE

Fill about 300 cc (10 fl. oz.) of damper oil (ATF or equivalent) in a clean container.  
Place the shock absorber in a hydraulic press using an Oil Seal Driver Attachment positioned as shown.  
Place the air hose in the oil and press the shock absorber slowly until the damper is filled with oil.

### NOTE

Do not over press the shock.  
The shock absorber's stroke is 47 mm  
(1.85 in.).

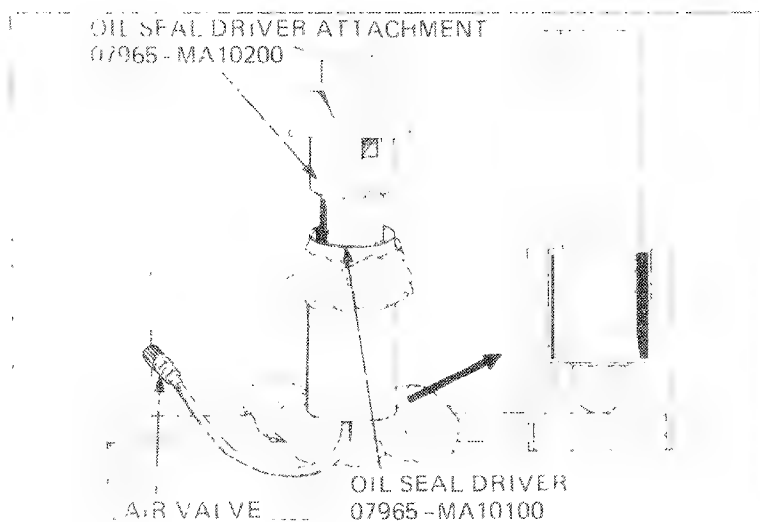


OIL SEAL DRIVER ATTACHMENT 07965 MA10200

Remove the shock from the press.  
Attach the air valve in the air hose.  
Put the Oil Seal Driver on the oil seal.  
Place the shock absorber in the hydraulic press using the Oil Seal Driver Attachment.  
Press the oil seal out by compressing the shock absorber.

### CAUTION

Spill as little ATF as possible to prevent air from entering the shock. Air in the shock will cause the damping to be too soft.

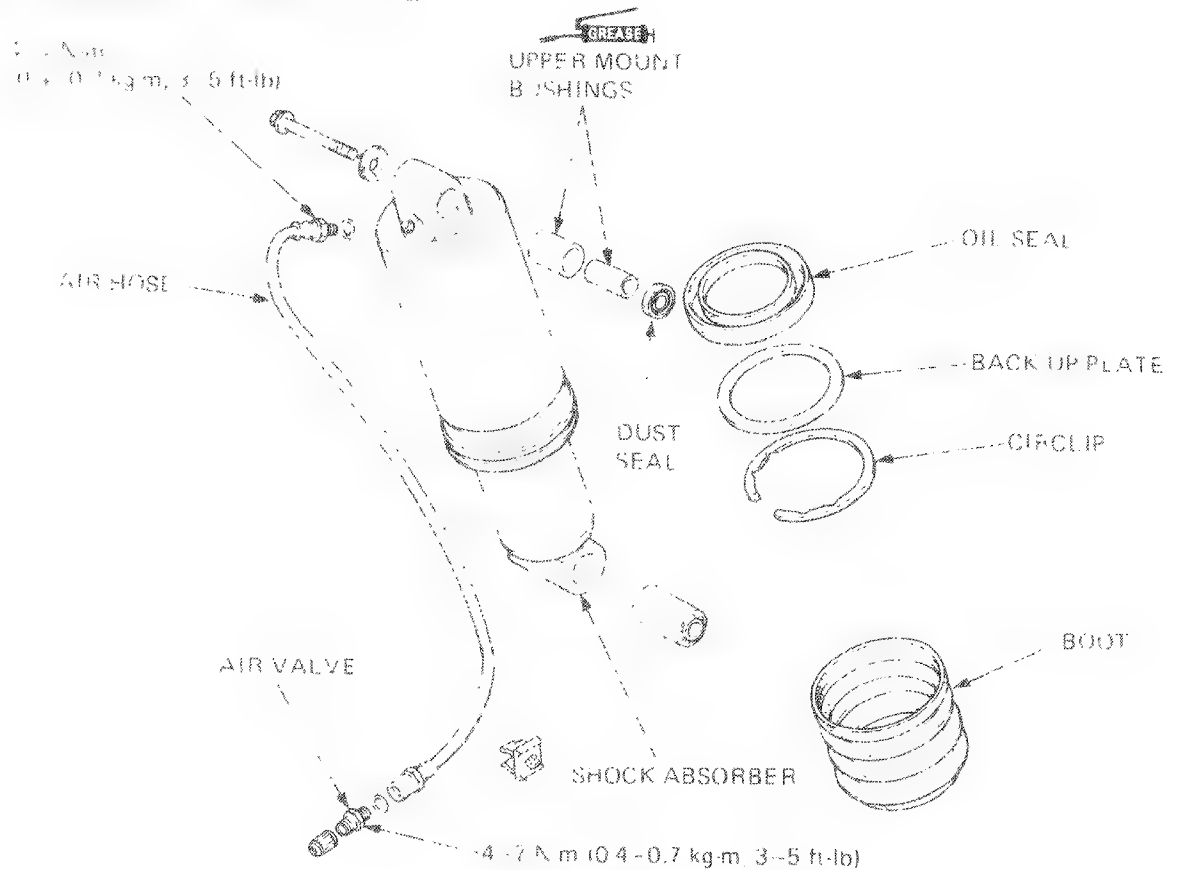




## SHOCK ABSORBER ASSEMBLY

209

Apply MULTIPURPOSE NLGI No. 2 (molybdenum based) additive GREASE to the upper mount bushings.



## REAR WHEEL BRAKE/FINAL DRIVE/ SUSPENSION



**HONDA**  
GL500  
GL500 INTERSTATE

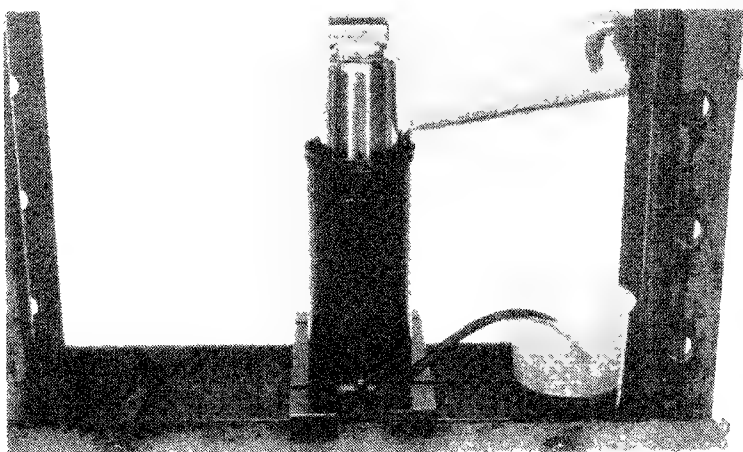
Fill the shock absorber with damper oil (ATE or equivalent).

Wrap a piece of tape around the groove at the end of the shock absorber.

Put the oil seal in damper oil and install it on the shock.

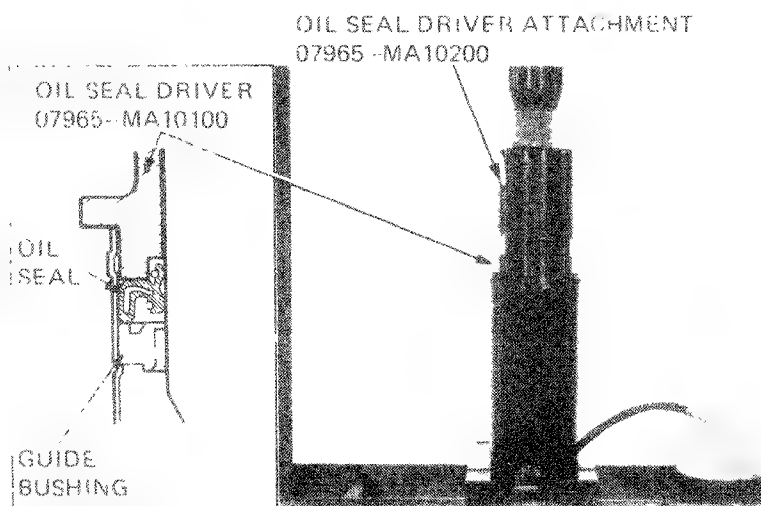
### CAUTION

*Do not scratch or damage the oil seal during installation.*



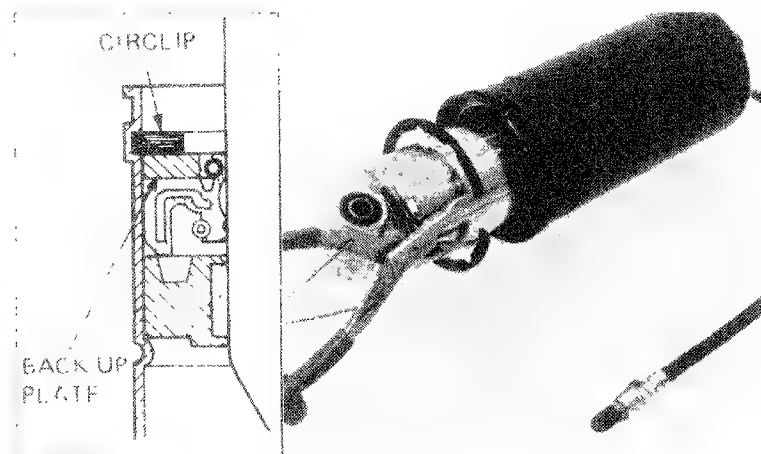
Remove the air valve from the air hose.

Push the oil seal in the shock absorber with a hydraulic press until the oil seal driver stops at the edge of the outer case.



Install the back up plate.

Install the circlip with the radiused edge facing rear.



14-15 Rear shock absorber with damper oil (Page 14-12)

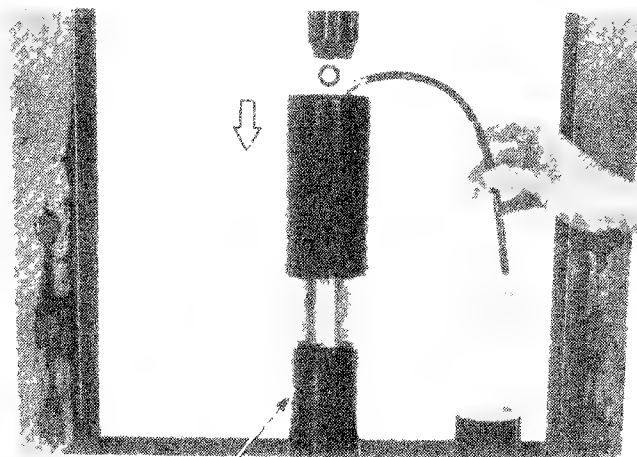
**CAUTION**

*Make sure that the damper is completely out of the oil.*

14-16 Fill the damper oil to specified capacity by pumping the shock absorber slowly.

**SPECIFIED CAPACITY** 200 cc (6.76 oz)

Remove the shock absorber from the motorcycle and fill the oil valve.  
14-17 Fill the shock absorber oil.



OIL SEAL DRIVER ATTACHMENT  
92065-MA10200

14-18 Apply the differential paste grease to the upper mount & springs.

**NOTE**

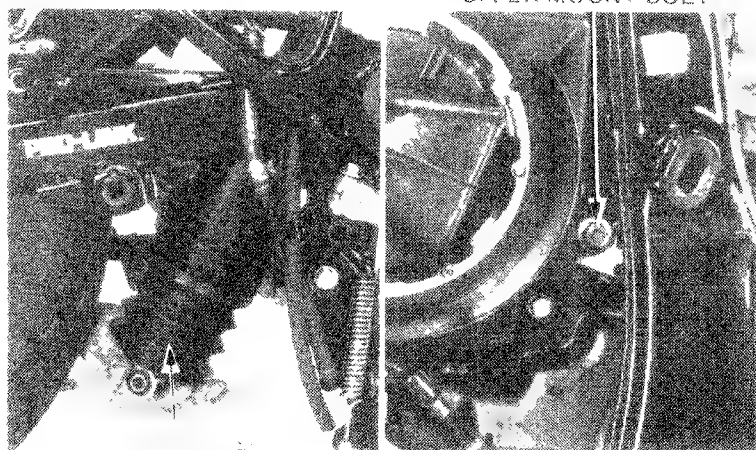
Use paste grease (containing more than 40% of molybdenum) as follows:

**MOLYKOTE-G PASTE or G-L PASTE**  
manufactured by Dow Corning U.S.A.  
or other lubricants of equivalent quality.  
Do not damage the shock absorber body.

14-19 Tighten the upper mount bolt.

**TORQUE:** 45-55 N·m

(4.5-5.5 kg-m, 33-40 ft-lb)



SHOCK ABSORBER

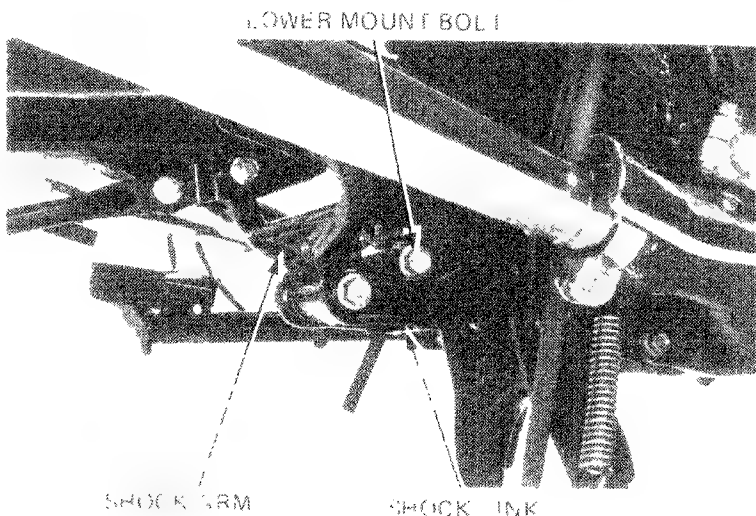
14-20 Enter the linkage pivot with paste grease and fit the shock arm and shock link (Page 14-26, 14-27).

14-21 Tighten the lower bolt.

**TORQUE:** 45-55 N·m

(4.5-5.5 kg-m, 33-40 ft-lb)

14-22 Assemble the



SHOCK ARM

SHOCK LINK



Make sure all weight is off the rear wheel, and charge the shock absorber with air.

**RECOMMENDED PRESSURE:**

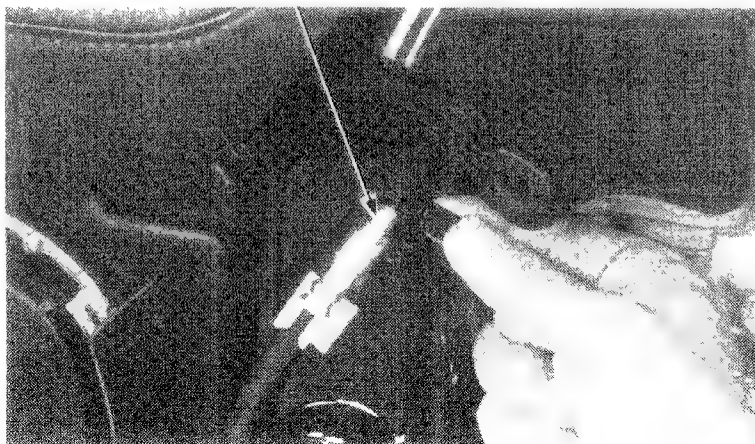
**STANDARD MODEL:**

0–500 kPa (0–5.0 kg/cm<sup>2</sup>, 0–70 psi)

**INTERSTATE MODEL:**

100–500 kPa (1.0–5.0 kg/cm<sup>2</sup>, 14–70 psi)

AIR VALVE



## SWINGARM/DRIVE SHAFT

### REMOVAL

Remove the shock absorber (Page 14-10).

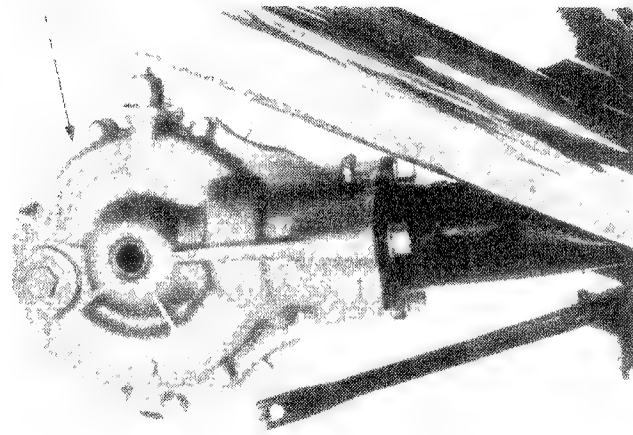
Remove the rear wheel (Page 14-3).

Remove the final gear case (Page 14-27).

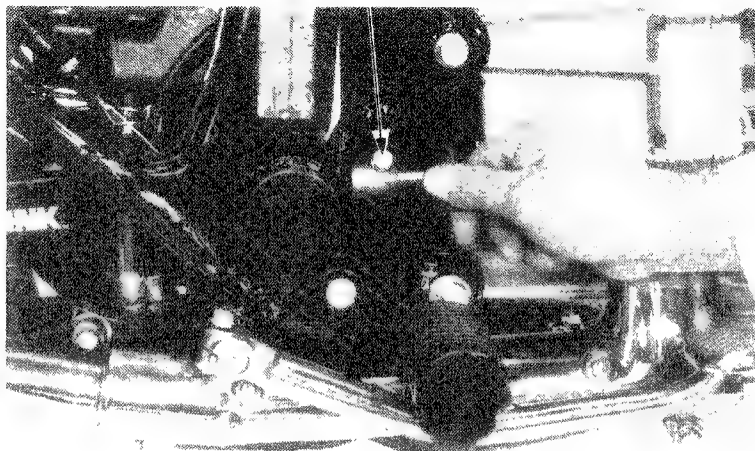
**CAUTION**

*Pump grease into the final gear case through the grease nipple whenever the drive shaft is removed from the engine.*

FINAL GEAR CASE



DRIVE SHAFT LOCK BOLT



Slide the bolt forward and remove the drive shaft from the swingarm.



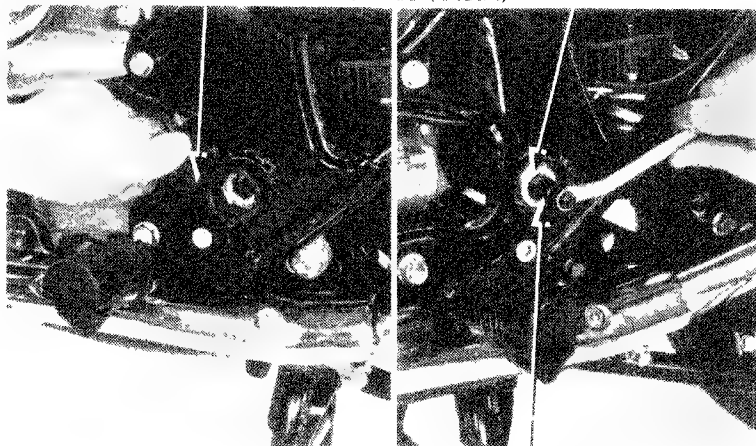


Remove the swingarm pivot lock nut and bolt.

SWINGARM LOCK NUT WRENCH

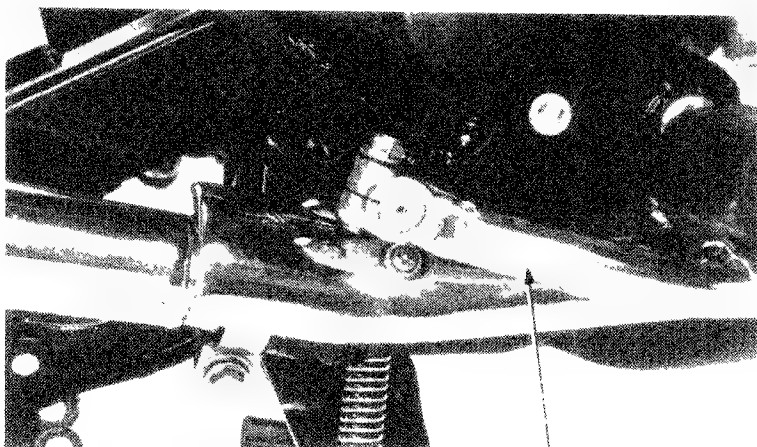
07908 -469001 or KS-HBA -08-469 (U.S.A)

PIVOT BOLT



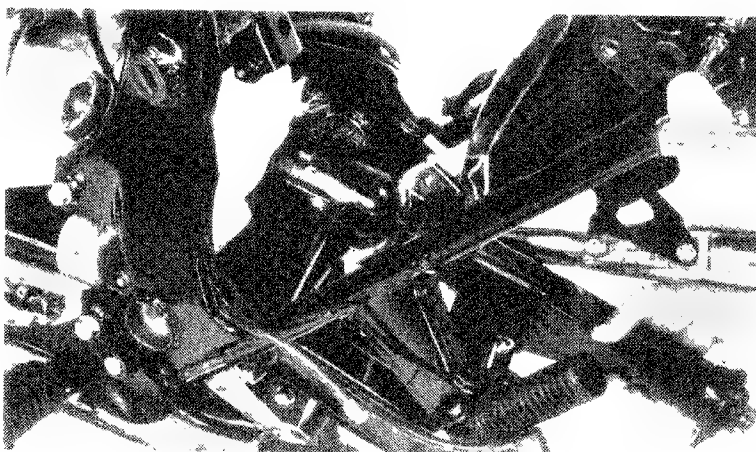
SOCKET BIT 17 mm

Remove the rear brake pedal.



REAR BRAKE PEDAL

Remove the swingarm.





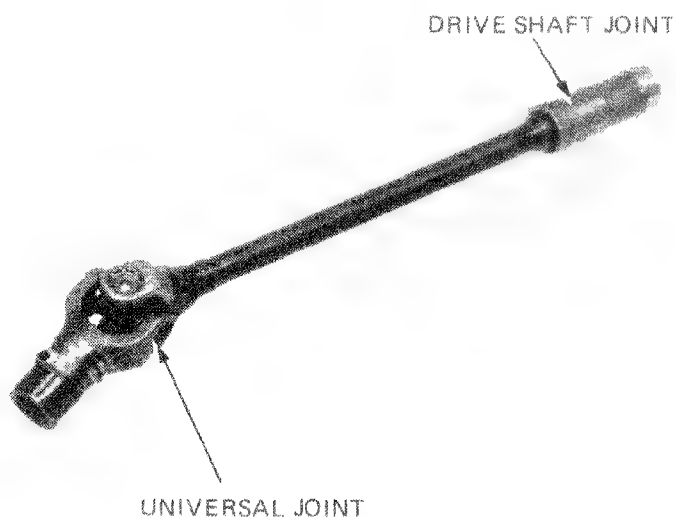
## DRIVE SHAFT INSPECTION

Remove the drive shaft from the swingarm.

Inspect the drive shaft and drive shaft joint splines for wear and damage.

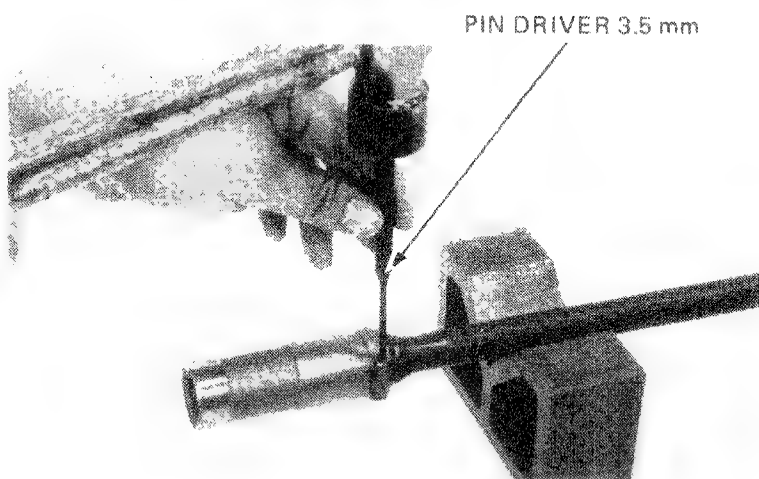
Inspect the universal joint. There should be no play in the bearings.

Rotate the shaft and joint in opposite directions. If there is any evidence of side play, the shaft must be replaced.



Drive out the spring pin.

Separate the drive shaft joint from the drive shaft.

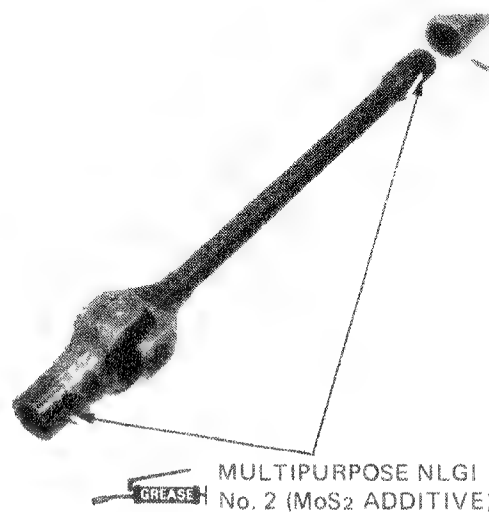


Lubricate the splines with MULTIPURPOSE NLGI No. 2 (molybdenum disulfide additive) GREASE.

Assemble the drive shaft and drive shaft joint and drive in the spring pin.

### NOTE

The spring pin should be below the drive shaft joint.





## PIVOT BEARING REPLACEMENT

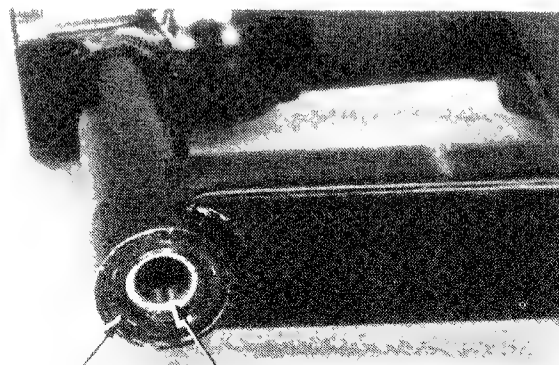
Inspect the tapered roller bearings and races for damage and wear.

If bearing replacement is required, remove the outer races from the swingarm.

### NOTE

Always replace pivot bearings in pairs.

Remove the left pivot bearing dust seal and inner bearing.



DUST SEAL

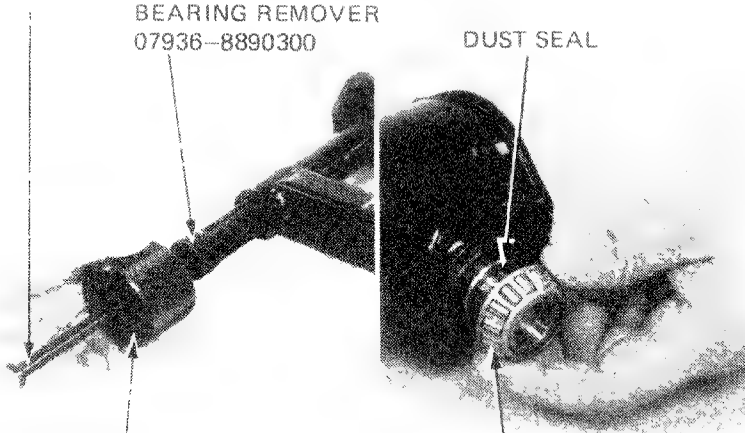
BEARING

BEARING REMOVER HANDLE 07936-3710100

BEARING REMOVER  
07936-8890300

DUST SEAL

Remove the outer race with the bearing remover.  
Remove the right pivot bearing and dust seal.



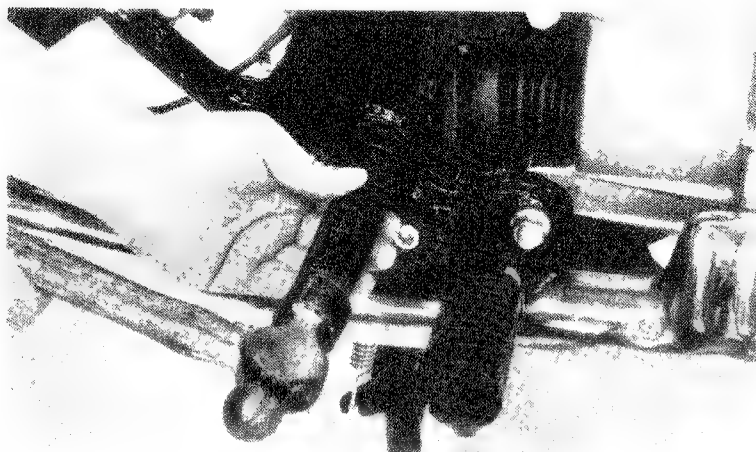
BEARING REMOVER WEIGHT  
07936-3710200

BEARING

Remove the cap and drive the pivot bearing holder out.

### CAUTION

Lightly tap the holder with a hammer.

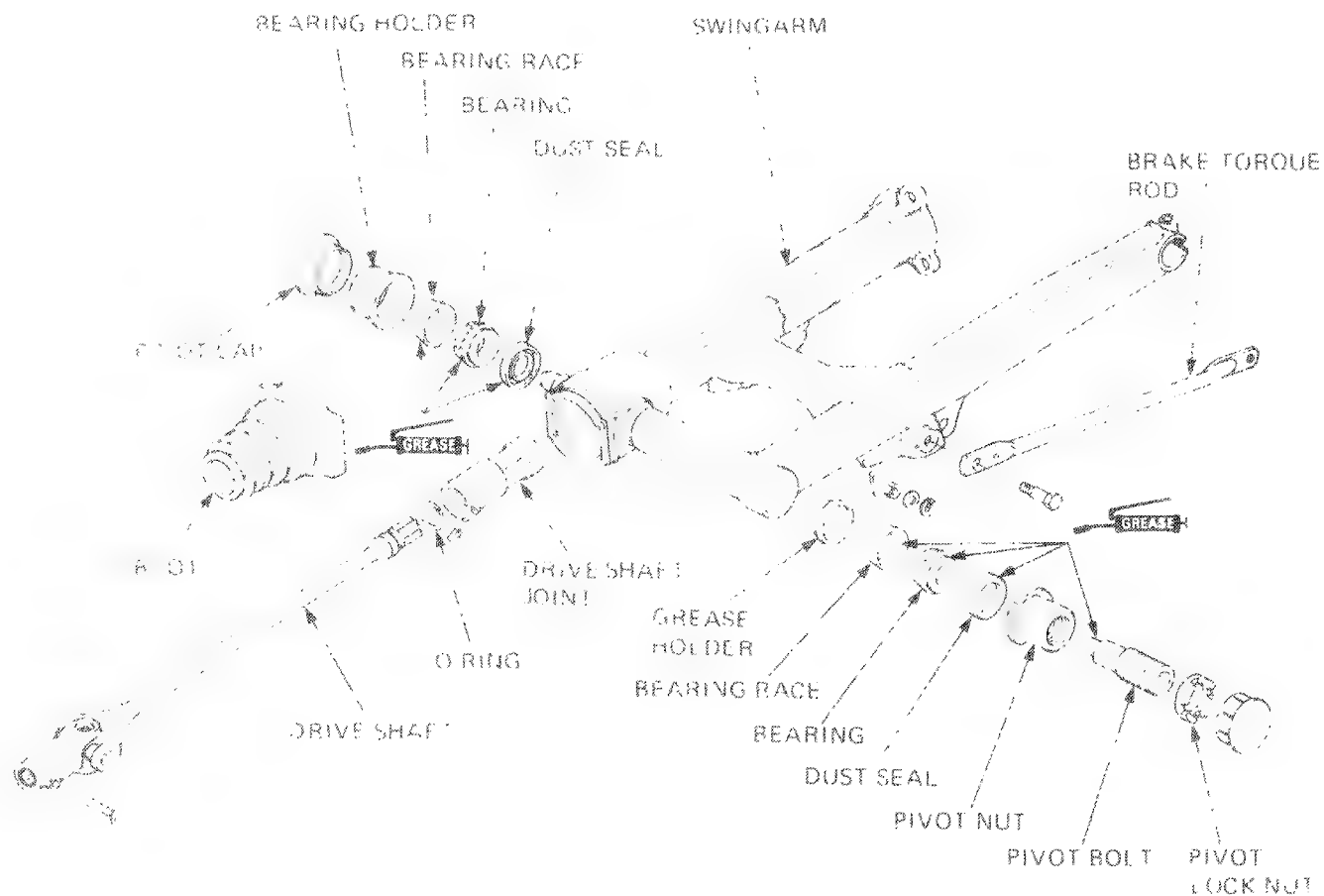


# REAR WHEEL BRAKE/FINAL DRIVE SUSPENSION

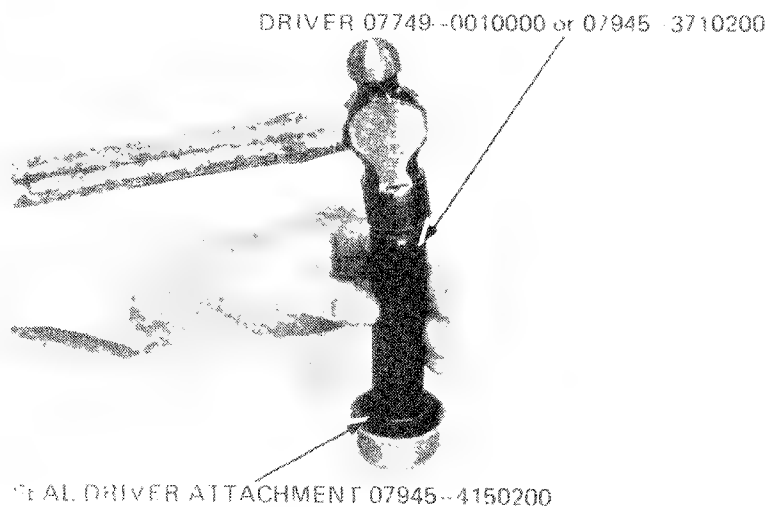


**HONDA**  
GL500  
GL500 INTERSTATE

1. Grease the bearing and drive shaft joint.



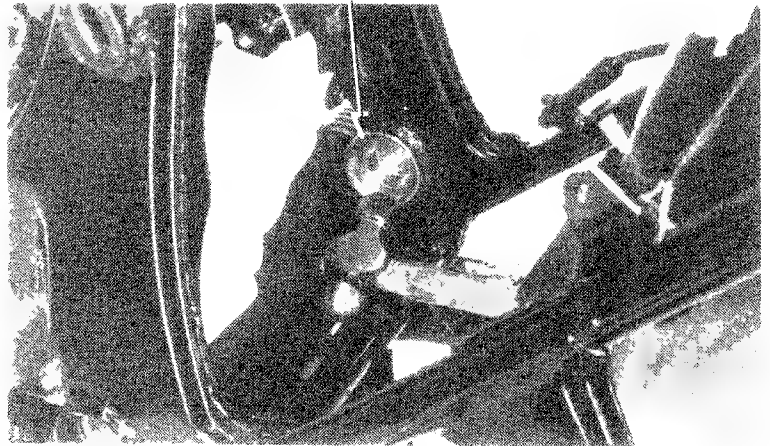
2. Push the bearing race squarely into the bearing.





Check the bearing fit to be sure that the flange is seated against the frame body.

BEARING HOLDER

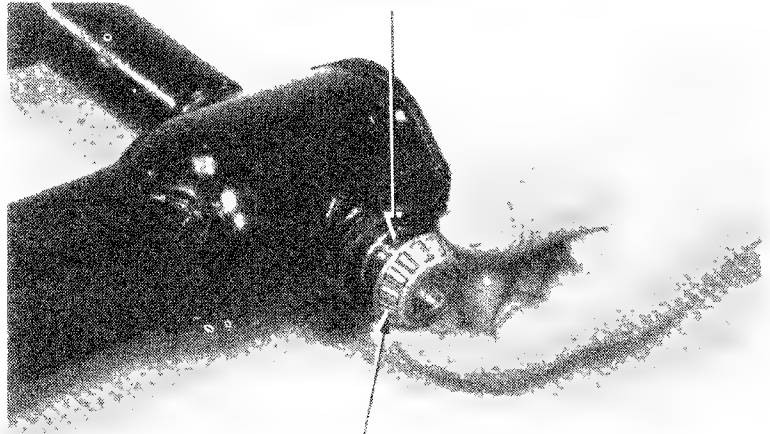


Push the dust seal and bearing into the swingarm.

**NOTE**

Note the installation direction of the dust seal.

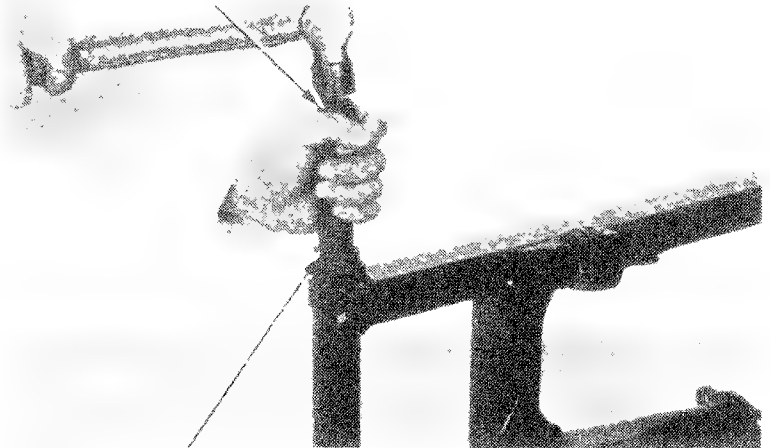
DUST SEAL



BEARING

Push the new bearing race into the swingarm.

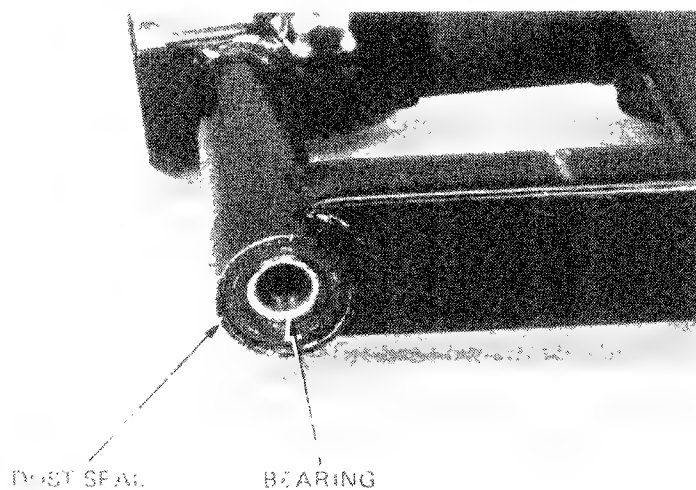
DRIVER 07749-0010000 or 07945-3710200



SEAL DRIVER ATTACHMENT 07945-4150200



1. Press the dust seal into the swingarm.

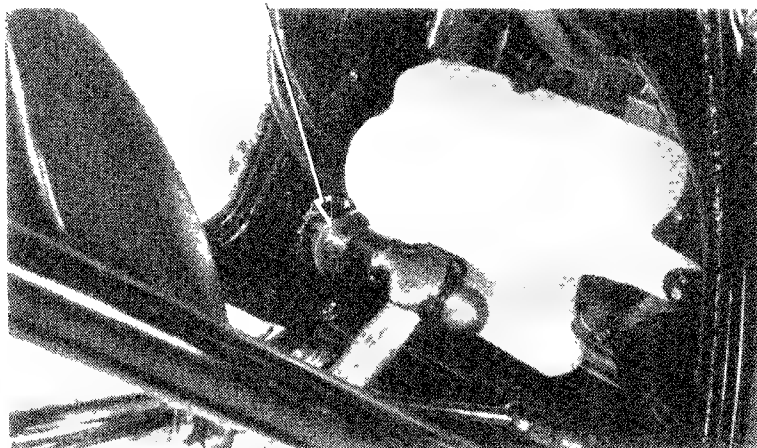


2. Press the pivot nut into the hole.

NOTE:

Align the tab of the pivot nut with the slot in the frame.

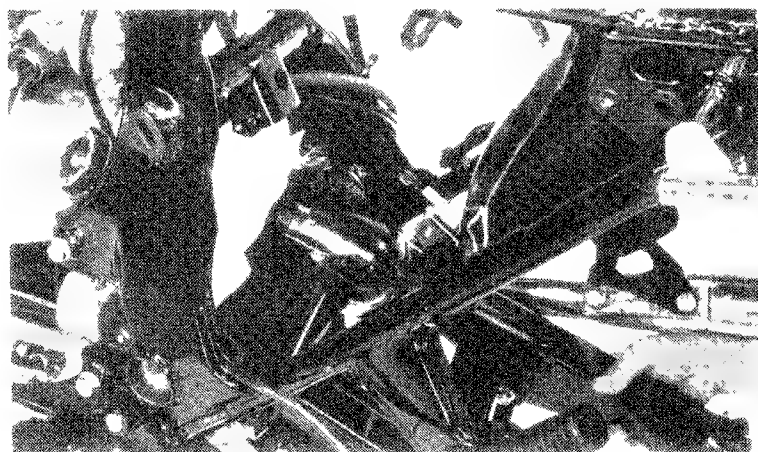
PIVOT NUT



## SWINGARM INSTALLATION

1. Press the swingarm into the swingarm.

2. Press the swingarm into the pivot bearing housing.



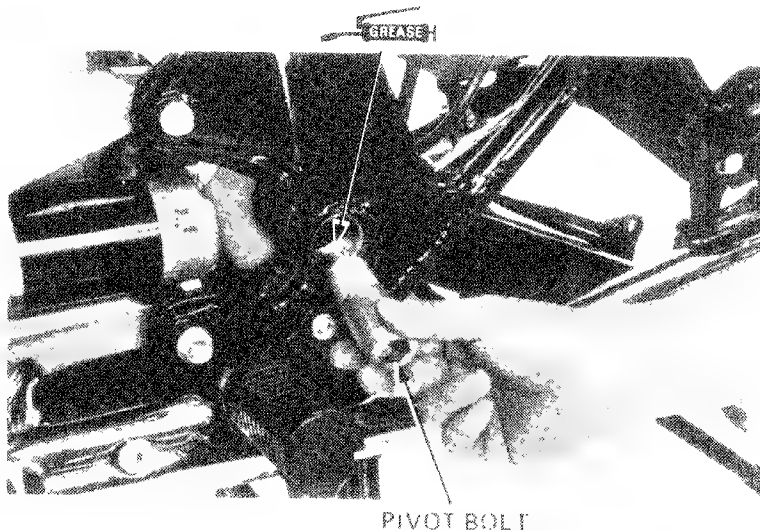




Apply grease to the tip of the pivot bolt and loosely install it.

**NOTE**

Make sure that the end of the pivot bolt is inserted into the bearing inner.

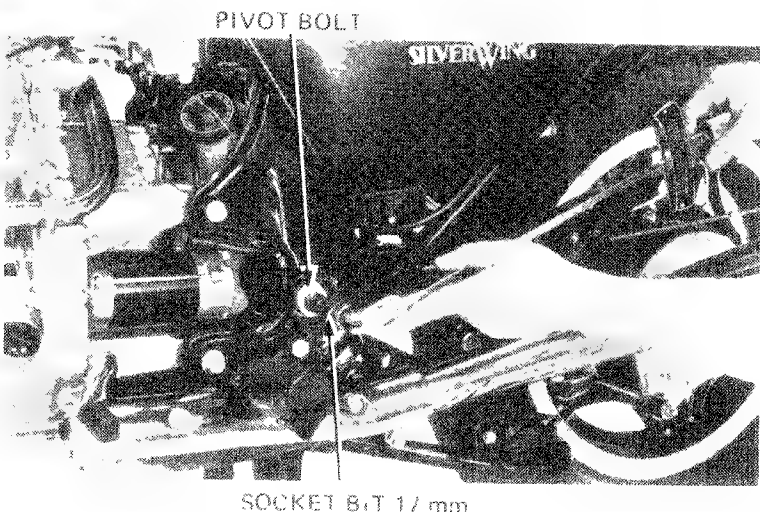


Tighten the pivot bolt to the specified torque.

**TORQUE:** 9–12 N·m  
(0.9–1.2 kg-m, 7–9 ft-lb)

Move the swingarm up and down several times to seat the bearings with the pivot bolt.

Retighten the pivot bolt to the specified torque.

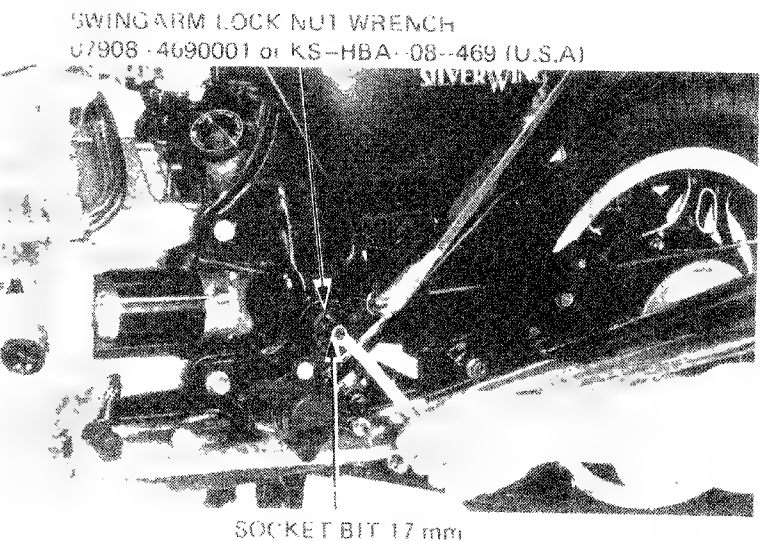


Install the pivot lock nut on the pivot bolt.  
Hold the pivot bolt and tighten the pivot lock nut to a torque wrench reading of 82–108 N·m (8.2–10.8 kg-m, 59–78 ft-lb).

**NOTE**

Because the lock nut wrench increases the torque wrench's leverage, the torque actually applied to the lock nut is the specified torque value 90–120 N·m (9.0–12.0 kg-m, 65–87 ft-lb).

Install the pivot caps.







- Install rear brake pedal.

### NOTE

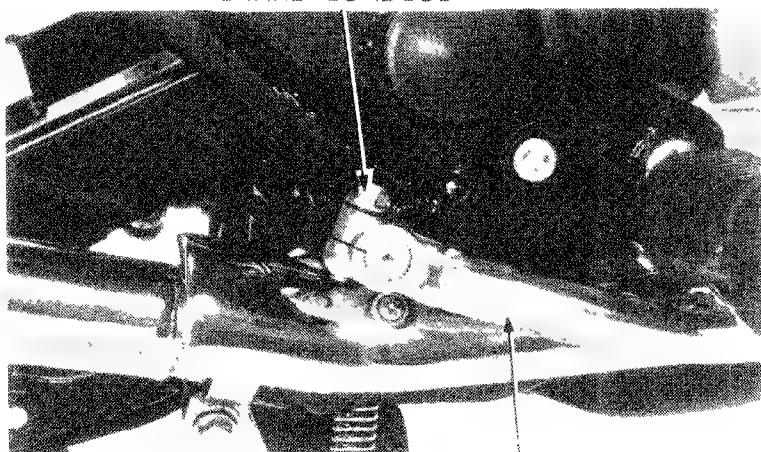
Align the punch marks on the spindle and pedal.

- Tighten the brake pedal bolt.

**TORQUE: 10-15 N·m**

(1.0-1.5 kg-m, 7-11 ft-lb)

BRAKE PEDAL BOLT



BRAKE PEDAL

- Coat the drive shaft splines with MULTI-PURPOSE NLGI No. 2 (molybdenum disulfide additive) GREASE.

- Attach the drive shaft and torque the lock bolt.

**TORQUE: 18-28 N·m**

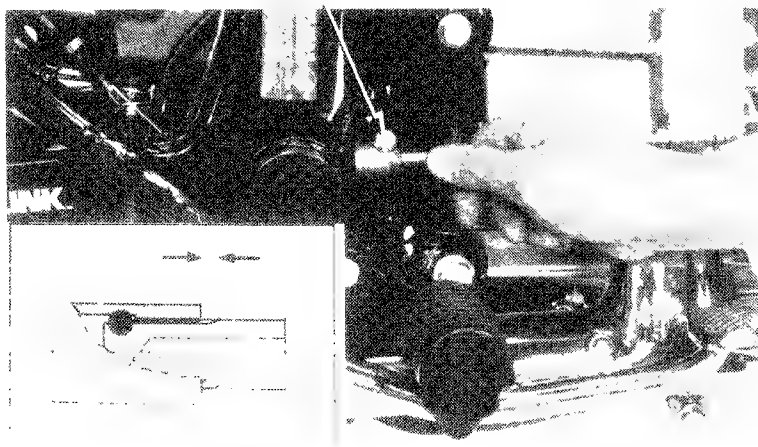
(1.8-2.8 kg-m, 13-20 ft-lb)

### WARNING

Check that the final shaft does not have more than 10 mm (0) of the splines showing.

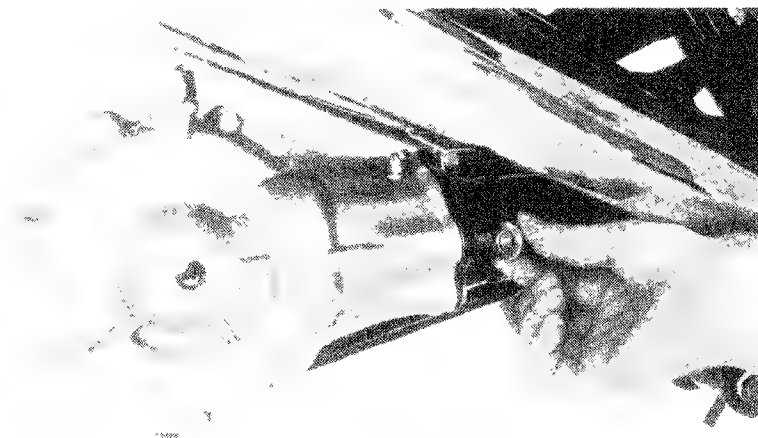
- Tighten bolt securely.

DRIVE SHAFT LOCK BOLT



- Install the final gear case (Page 14-40).

- Install the rear wheel (Page 14-9).



## SUSPENSION LINKAGE

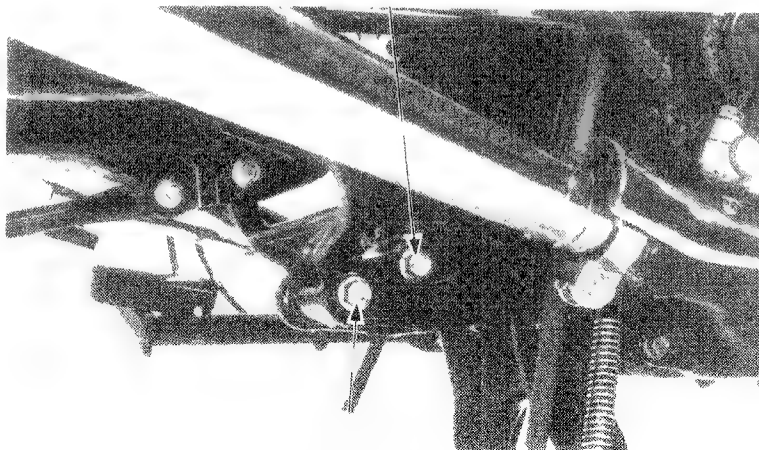
### REMOVAL

Remove the muffler.

Remove the rear shock absorber lower mount bolt.

Remove the pivot bolt attaching the shock arm to the shock link.

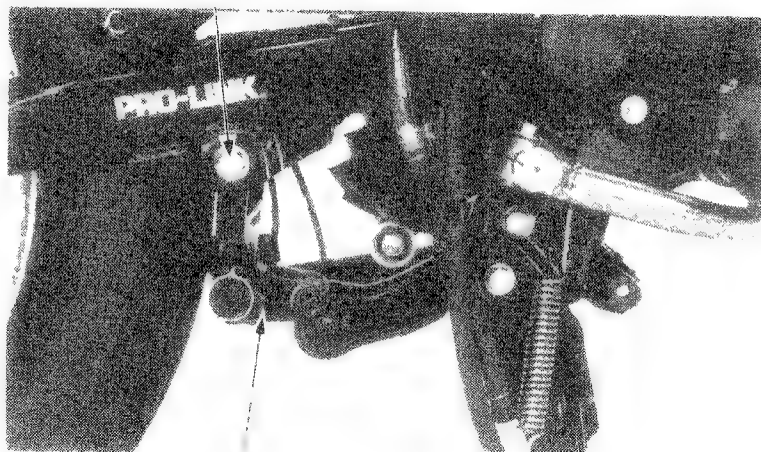
LOWER MOUNT BOLT



PIVOT BOLT

Remove the pivot bolts attaching the shock arm to the swingarm.

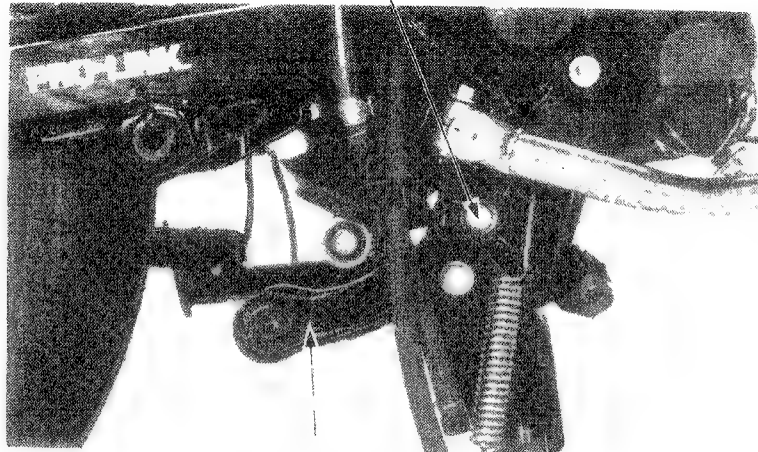
PIVOT BOLT



SHOCK ARM

Remove the shock link by removing the pivot bolt.

PIVOT BOLT



SHOCK LINK

## REAR WHEEL/BRAKE/FINAL DRIVE/ SUSPENSION



**HONDA**  
GL500  
GL500 INTERSTATE

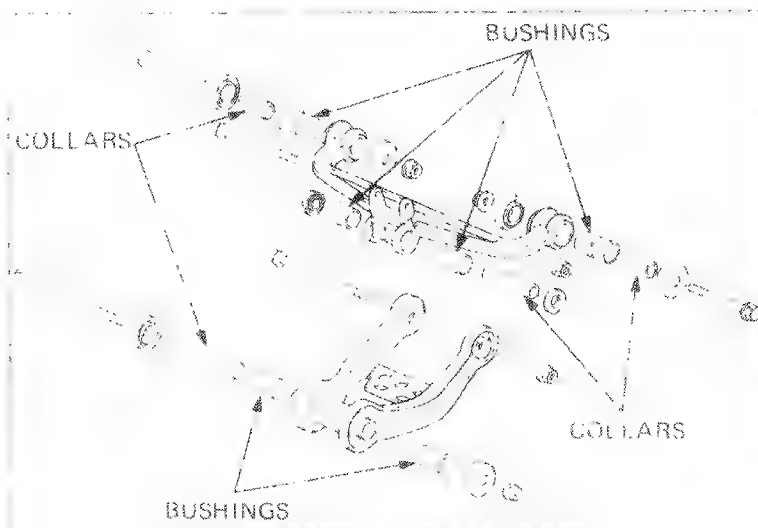
### INSPECTION

Inspect the contact surface of the collars and the inside of the bushings.

Replace them if they have score marks, scratches, or excessive abnormal wear.

### NOTE

The bushings are press fitted. Do not remove the bushings unless they have to be replaced.



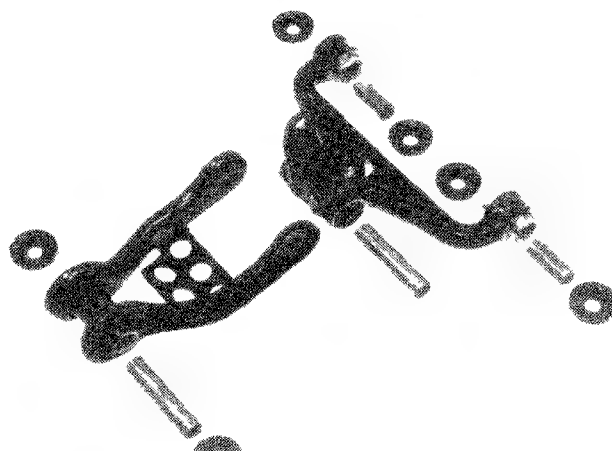
### INSTALLATION

Apply paste grease (containing more than 45% molybdenum) to the inside of the bushings and dust seal tips.

### NOTE

Use molybdenum paste grease such as MOLYKOTE<sup>®</sup> G PASTE or G-11 PASTE manufactured by Dow Corning U.S.A. or other lubricants of equivalent quality.

Install the collars and dust seals making sure that they are seated properly.



Attach the shock link onto the frame and torque the pivot bolts.

**TORQUE:** 45-55 N·m  
(4.5-5.5 kg-m, 33-40 ft-lb)

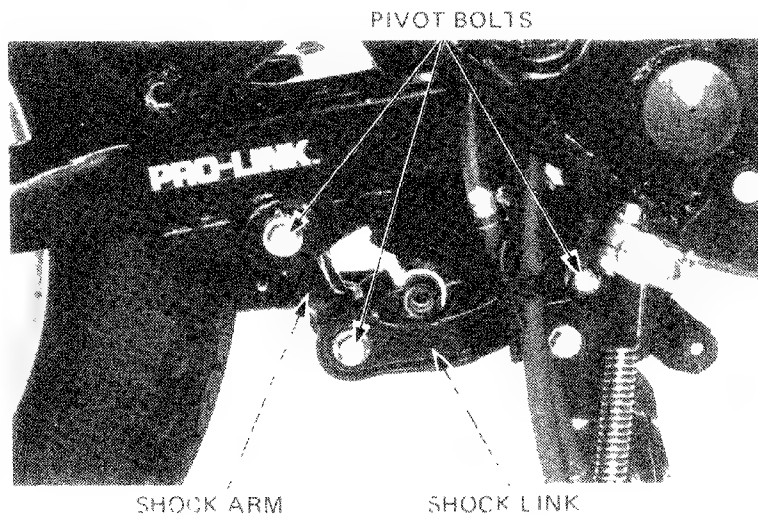
Attach the shock arm to the swingarm and torque the pivot bolts.

**TORQUE:** 45-55 N·m  
(4.5-5.5 kg-m, 33-40 ft-lb)

Check the shock link and arm operation by moving them.

Attach the shock arm to the shock link and torque the pivot bolts.

**TORQUE:** 45-55 N·m  
(4.5-5.5 kg-m, 33-40 ft-lb)

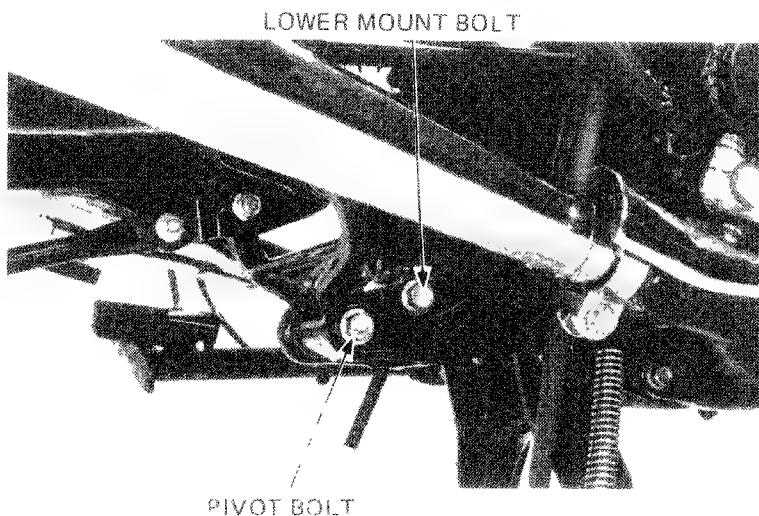




Install the shock absorber lower mount to the shock absorber and torque the mount bolt:

**TORQUE:** 45–55 N·m  
(4.5–5.5 kg·m, 33–40 ft·lb)

Install the muffler.

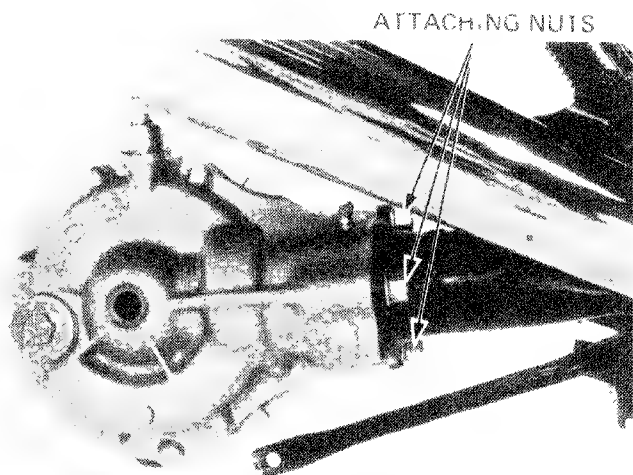


## FINAL DRIVE

### FINAL GEAR CASE REMOVAL

- Place the motorcycle on its center stand.
- Remove the rear wheel (Page 14-3).
- Remove the distance collar.
- Remove the final gear case attaching nuts.
- Remove the final gear case from the swingarm.

Drain the final gear case oil if disassembling the gear case.



### BACKLASH INSPECTION

Place the final gear case in a vise.

#### NOTE

Do not tighten the drive hub in the vise excessively.

Install the preload inspection tool to hold the drive gear securely.

Set up a dial indicator on the ring gear teeth.

Remove the oil filler cap.

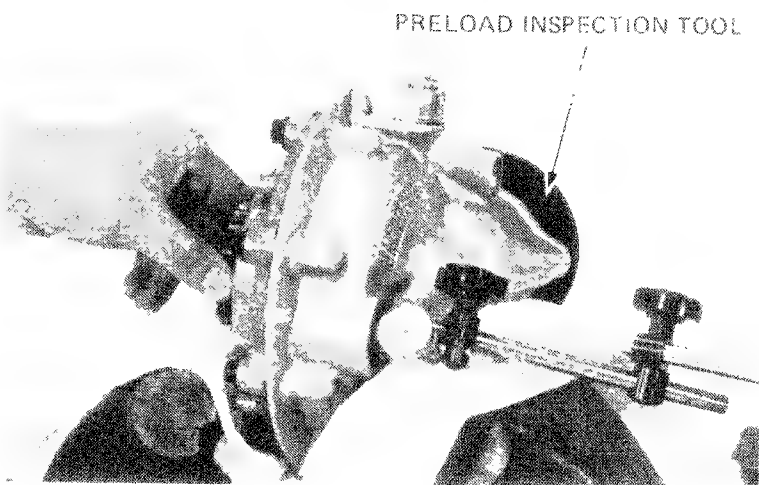
Set a horizontal type dial indicator on the ring gear through the oil filler hole.

Rotate the ring gear until gear slack is taken up.

Turn the ring gear back and forth to read backlash.

Standard: 0.08–0.18 mm (0.003–0.071 in)

Service Limit: 0.25 mm (0.010 in)





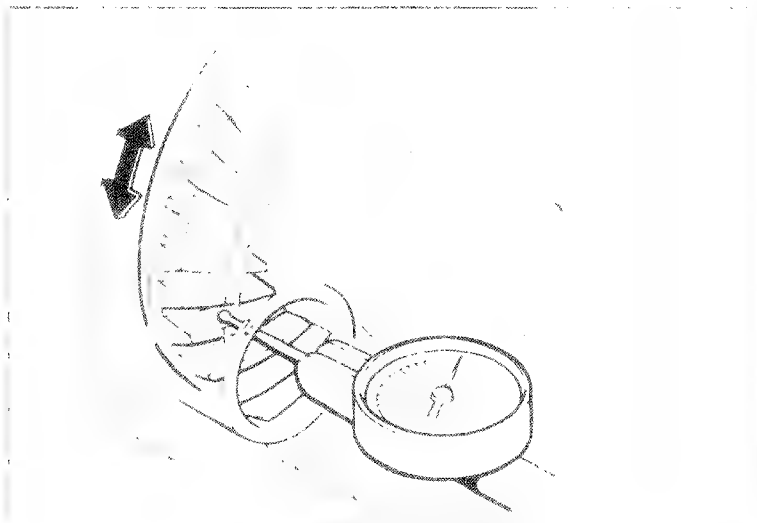
See Fig. 14-27 for a section to be and draw a line through the ring gear T20 and measure backlash. Repeat this procedure once more. Compare the backlash between the three measurements.

### **Difference Of Measurement**

**Service Limit 0.10 mm (0.004 in)**

If backlash is excessive, check the pinion gear preload (Page 14-30) and final gear assembly preload (Page 14-31).

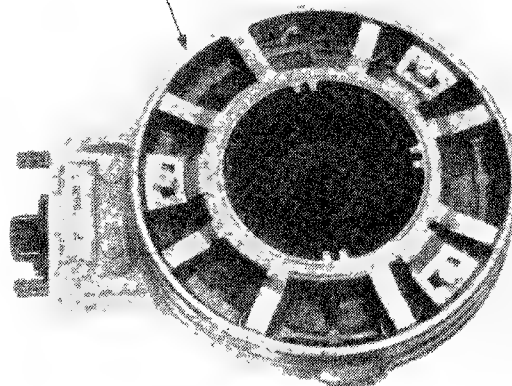
If preload is correct, the final drive assembly must be replaced.



## **RING GEAR OIL SEAL REPLACEMENT**

Straighten the tabs of the lock plates and remove the dust guard plate.

DUST GUARD  
PLATE

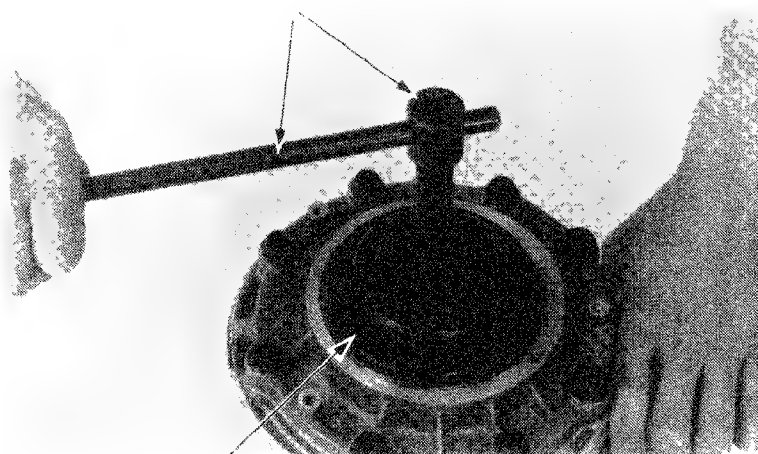


Remove the ring gear bearing retainer with the retainer wrench.

Remove the O-ring from the retainer.

Insert the oil seal. If the lip is worn or damaged, or if the spring band is distorted, replace the oil seal.

EXTENSION BAR & HANDLE

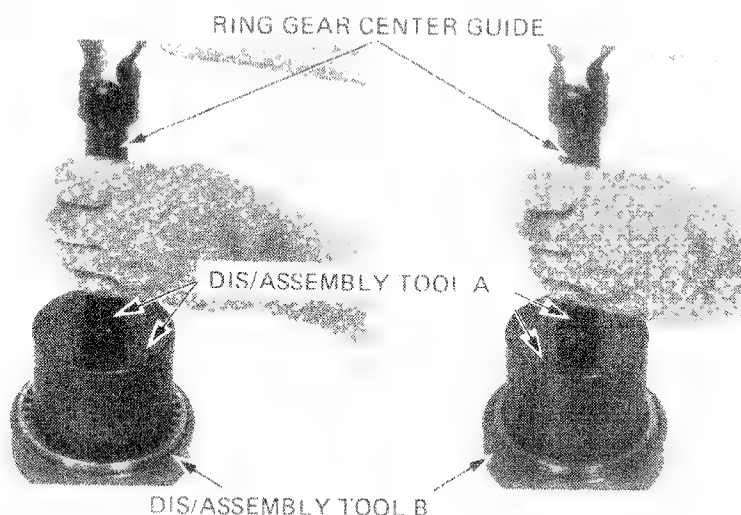


RING RETAINER WRENCH 07910-3710000

Remove the dust and oil seals from the retainer.  
Coat the outer edges of both seals with gear oil.  
Press the new seals into the retainer.  
Coat the new O-ring with gear oil and install it.  
Install the ring gear bearing retainer being careful  
not to fold or damage the oil seal lips.

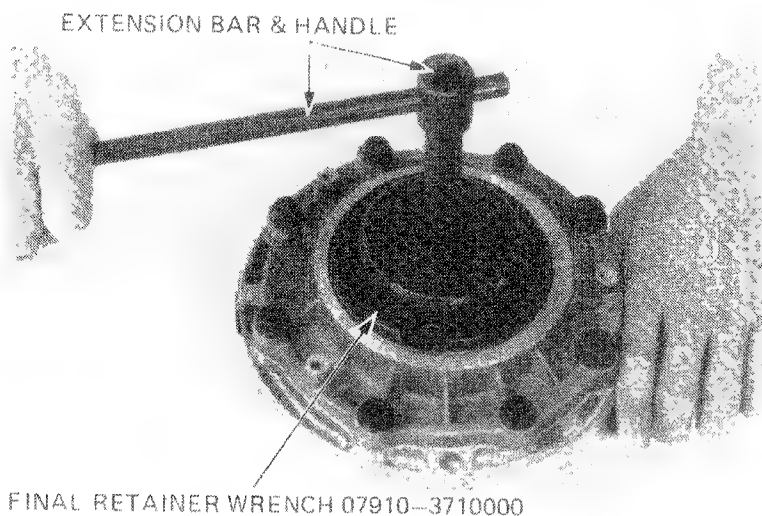
**NOTE**

- After installing the ring gear bearing preload retainer, do the following:
  - Final gear assembly preload check (Page 14-37)
  - Backlash inspection (Page 14-27)

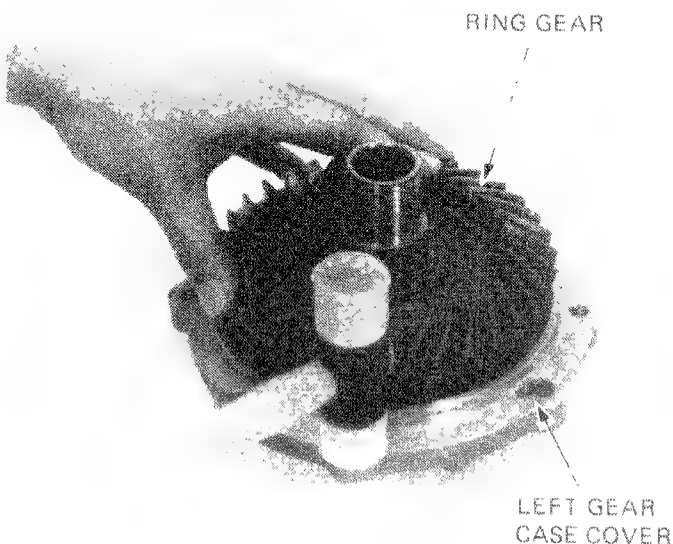


**RING GEAR REMOVAL/GEAR CASE OIL SEAL REPLACEMENT**

Loosen the ring gear bearing preload retainer 5  
notches with the retainer wrench.  
Remove the eight gear case bolts.  
Lift the cover from the gear case.



Separate the left case cover from the ring gear and  
bearing by tapping it lightly with a plastic hammer  
without damaging the parts.







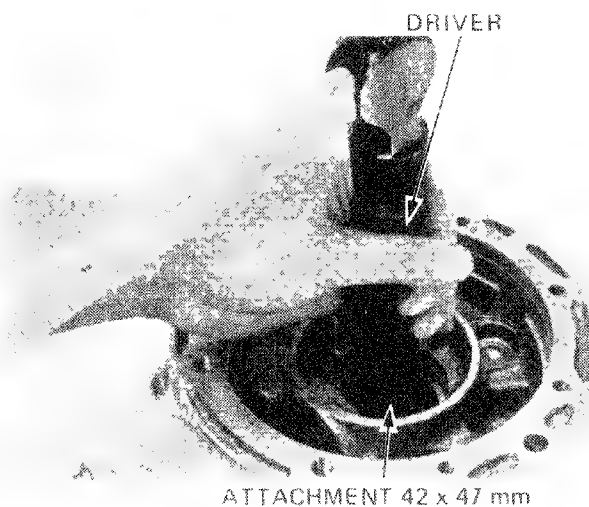
Inspect the final gear oil seal for leaks. Replace the seal if the lip is damaged or if the inner band is distorted. If replacement is necessary, proceed as follows to remove the final gear bearing.

### NOTE

Drive the oil seal in squarely.

### CAUTION

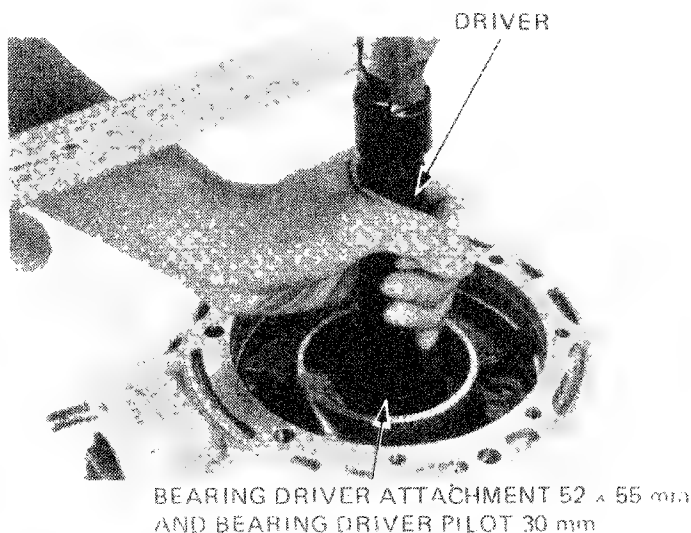
Do not use gear case events when removing the final gear bearing race.



Inspect the bearing for smooth operation while spinning it by hand. Replace the bearing with a new one if it is noisy or has excessive play.

### NOTE

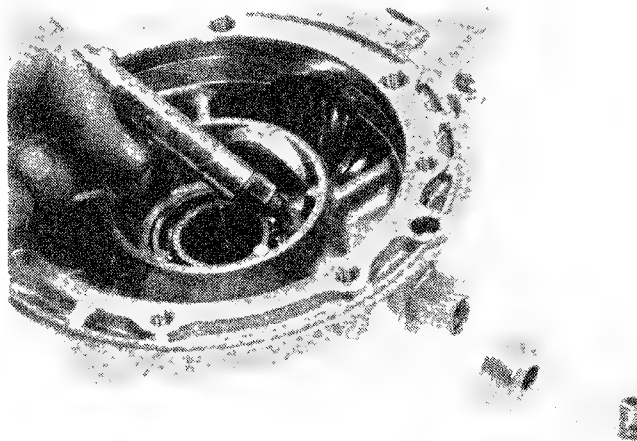
Drive the bearing in squarely. After replacing the bearing, check gear backlash, tooth contact, and final gear assembly preload.



## BREATHER SYSTEM MAINTENANCE

Check the breather hole for clogging. Clean it if necessary.

Check the inside and outside of the breather cap.

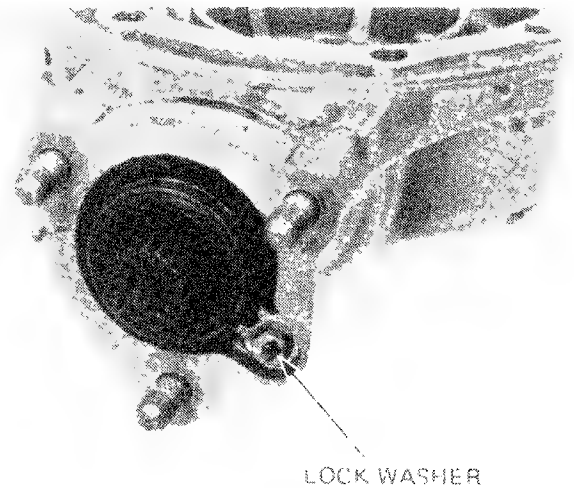






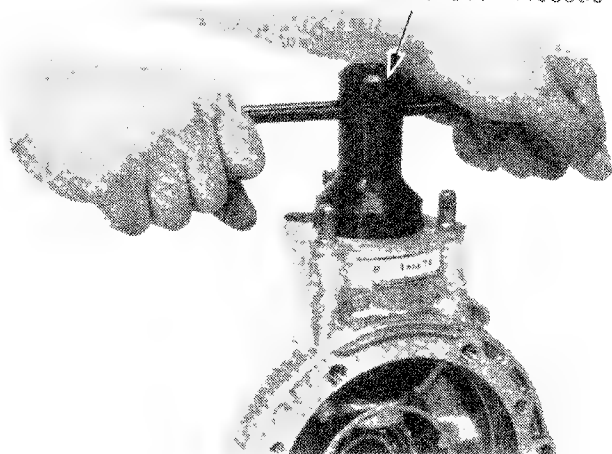
## PINION GEAR RETAINER REMOVAL

Remove the pinion gear retainer lock washer.



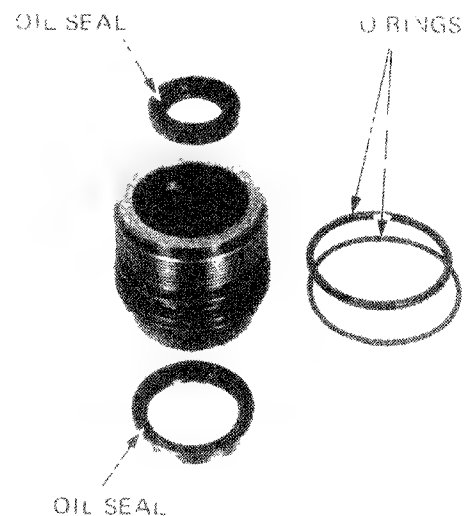
Remove the retainer.

PINION RETAINER WRENCH  
07910-MA10100 or 07910-4150000



## PINION GEAR RETAINER OIL SEAL, O-RING REPLACEMENT

Inspect the retainer oil seal. Replace the seal if the seal is worn or damaged, or if the spring band is distorted. Replace the O-rings.





5. Coat the oil seal groove with MULTIPURPOSE  
Grease (No. 2 molybdenum disulfide additive)  
GREASE and install the oil seal into the retainer.  
Coat the new O-rings with the same grease and  
install them into the retainer.

DRIVER 07749-0010000 or 07945-3710200

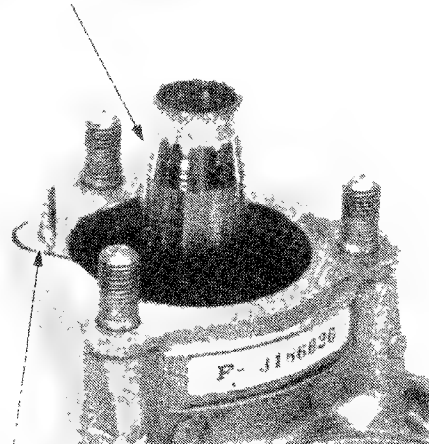


SEAL DRIVER ATTACHMENT 07945-4150200

## PINION GEAR RETAINER INSTALLATION

Set the timing guide into the gear case cut-out and  
insert guide over the pinion shaft.

OIL SEAL GUIDE 07973-MA10100



O-RING GUIDE 07973-MA10200

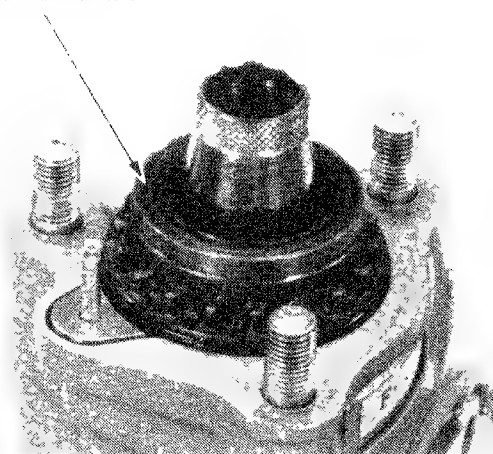
Now fit the retainer into place with the retainer  
screws until the oil seal guide is contacted.

### CAUTION

*Do not pull it to damage the O-rings.  
The retainer has very fine threads, so be  
careful not to cross-thread it.*

Remove the oil seal guide.

PINION RETAINER



Press the retainer into the case by hand. Turn the pinion shaft intermittently. Stop tightening the retainer when pinion shaft rotating resistance is felt. Do not overtighten the retainer.

Refer to the fitting guide.

#### NOTE

- If the retainer is overtightened, it will cause excessive preload.
- A high amount of drag is normal because of the O-rings.

#### PINION RETAINER WRENCH 07910 MA10100 or 07910 4150000



PINION SHAFT

#### PINION GEAR PRELOAD INSPECTION AND ADJUSTMENT

Wrap a wire around the tool groove and attach a spring scale. Measure the preload force needed to turn the pinion shaft in the normal direction of rotation.

##### Pinion Gear Preload:

- Force: 800–1,000g (1.76–2.2 lbs)
- Torque: 0.4–0.5 N·m  
(4.0–5.0 kg-cm, 3.48–4.32 in-lb)

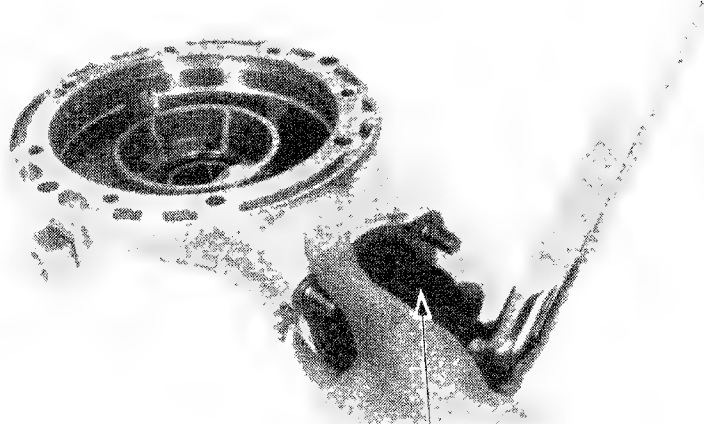
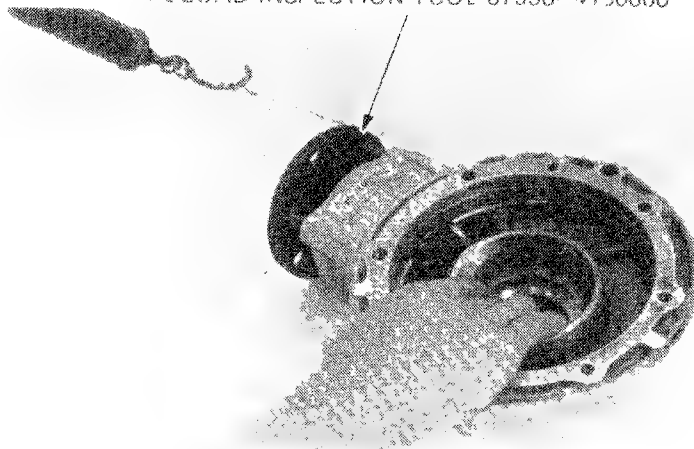
#### NOTE

- If measurements are not consistent, rotate the pinion gear 50–60 turns, then check preload.
- Force required to begin movement may exceed preload specifications.

If preload is insufficient, remove the preload inspection tool, then install pinion gear retainer wrench and tighten the retainer.

Refer to the pinion gear preload.

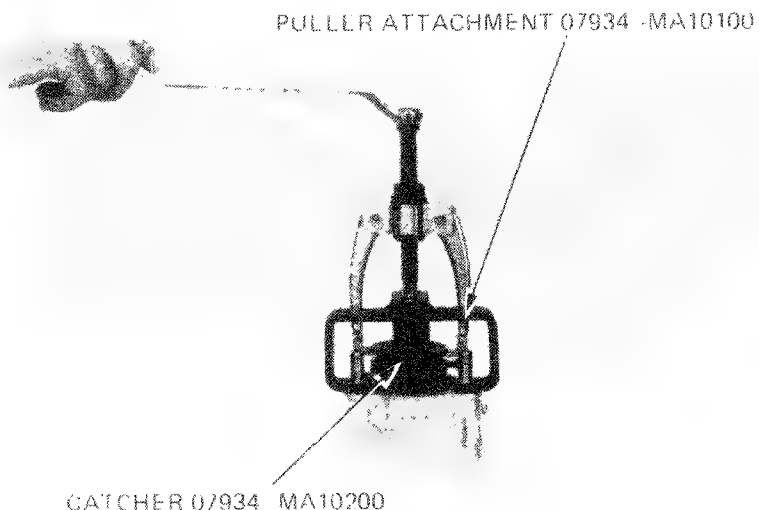
#### PRELOAD INSPECTION TOOL 07998 4150000



PINION RETAINER WRENCH  
07910 MA10100 or 07910 4150000



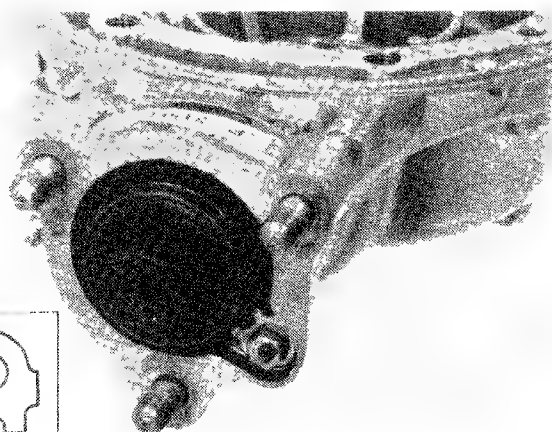
If clearance exceeds 1 mm, move the preload inspection tool inner, install the pinion gear retainer lock tab and remove the retainer.  
Place a pin on the pinion shaft with the special tools, then turn lock on preload.



Install the retainer lock tab.

### **NOTE**

The lock tabs are available in two types.  
Be sure to use the proper type lock tab.

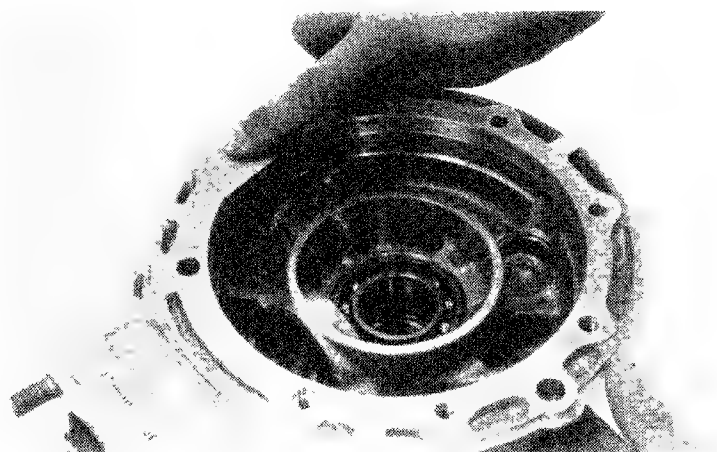


### **RING GEAR INSTALLATION**

Scrape all bonding material off the mating surfaces of the gear base and cover.

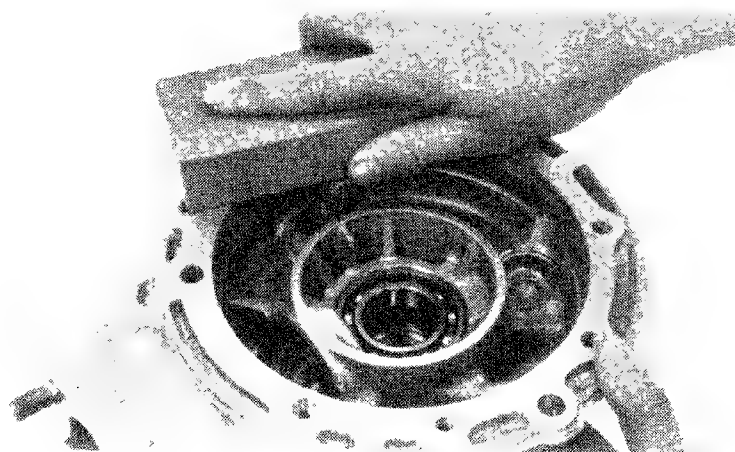
### **NOTE**

Do not allow dust and dirt to enter the gear case.  
Do not damage the mating surfaces of the gear case and cover.





Wipe the gear case cover mating surface with an  
ethylene.



Apply gear oil sealant to the mating surfaces of the  
gear case and cover.

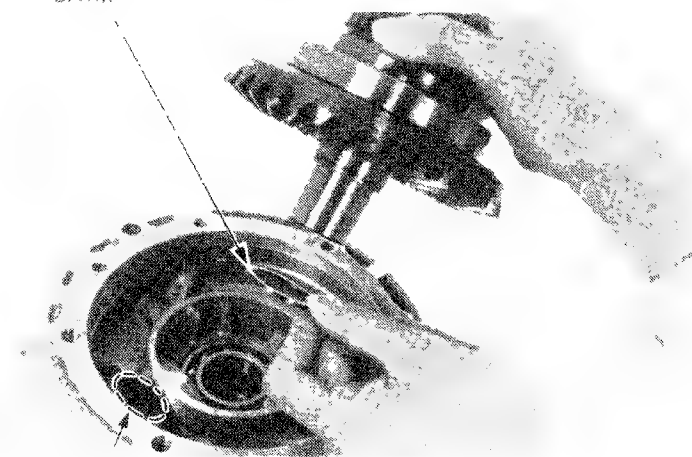


Apply a thin coating of Prussian Blue to the pinion  
gear teeth for gear tooth contact pattern check,  
prior to installing the ring gear  
assembly. The ring gear assembly being careful not to  
damage or fold the oil seal lips.

**NOTE**

Do not allow the left gear case cover to tilt  
during installation.

RING GEAR  
SHIM

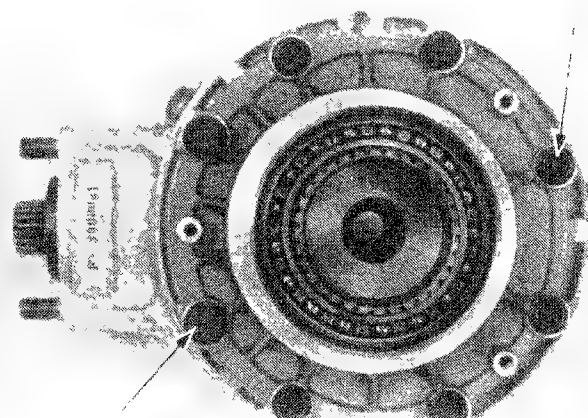


PRUSSIAN BLUE

Slide the gear case cover on to the final gear case.  
Tighten the cover bolts in 2-3 steps until the left  
gear case cover touches the gear case. Torque the  
cover bolts in a cross pattern in two or more steps.

## TORQUE SPECIFICATION.

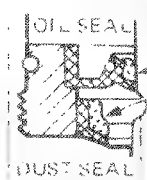
8 mm bolt: 23-28 N·m  
2.3-2.8 kg·m, 17-20 ft·lb)  
10 mm bolt: 35-45 N·m  
(3.5-4.5 kg·m, 25-33 ft·lb)



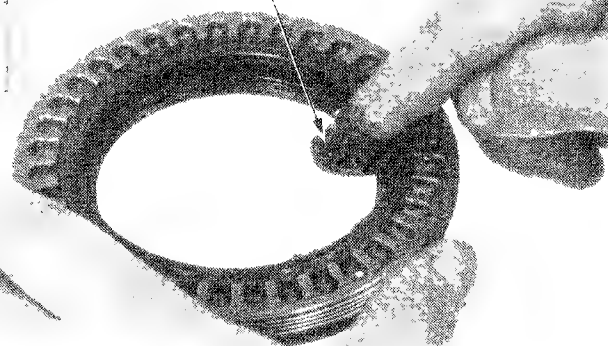
8 mm BOLT

10 mm BOLT

Apply multipurpose bearing retainer oil and dust seal  
grease. Use MULTIPURPOSE NLGI No. 2 (MoS<sub>2</sub> additive)  
GREASE.



MULTIPURPOSE GREASE



Slide the final gear retainer onto the gear case.  
Slide the retainer bottoms against the bearing.

Apply the torque (T) to overcome the friction  
caused by the grease.

Loosen the retainer to T + 40 N·m (4.0 kg·m,  
29 ft·lb), back off and retighten to T + 10 N·m  
(1.0 kg·m, 7 ft·lb).

## FINISH

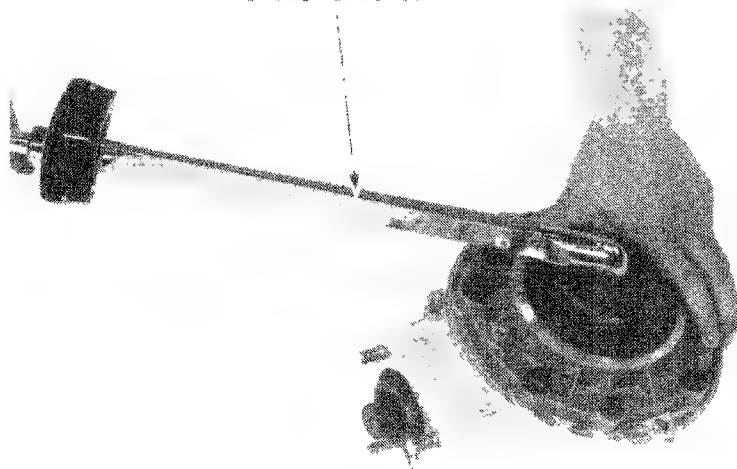
After assembling the final gear case, perform  
the following operations.

1. Backlash inspection

2. Final gear preload check (Page 14-37)

3. Gear tooth contact pattern check  
(Page 14-37)

FINAL RETAINER WRENCH  
07910-3710100





## FINAL GEAR ASSEMBLY PRELOAD INSPECTION AND ADJUSTMENT

### NOTE

Use this inspection and adjustment whenever the ring gear retainer is removed, or if final gear assembly preload is being checked.

Install the preload inspection tool.

Attach a spring scale to the wire. Measure the preload force needed to turn the pinion shaft in the normal direction of rotation.

### FINAL GEAR ASSEMBLY PRELOAD.

Force 1,200-1,800g (2.65-3.97 lbs)

Torque 0.6-0.9 N·m

(6.0-9.0 kg-cm, 5.16-7.80 in-lb)

If the preload exceeds specifications, remove the ring gear and check the pinion gear preload (Page 14-32).

If the pinion gear preload is within the specifications, install the ring gear and ring gear retainer and adjust the final gear assembly preload by tightening the retainer.

### NOTE

- Tighten the retainer gradually while measuring the preload.
- Loosen the ring gear retainer and turn the pinion gear several times, if preload is excessive.

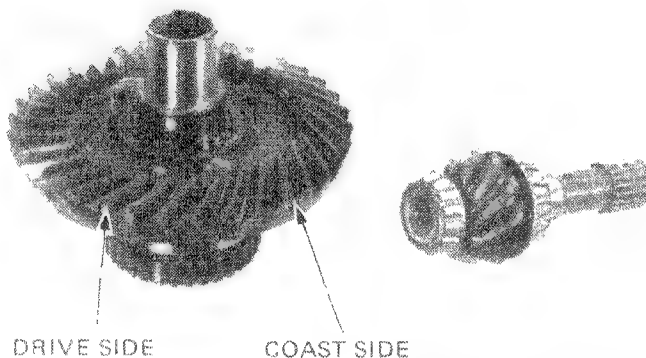
PRELOAD INSPECTION TOOL  
07998-4150000



## GEAR TOOTH CONTACT PATTERN CHECK AND ADJUSTMENT

Remove the oil filler cap from the final gear case.

Check the gear tooth contact pattern by rotating the ring gear several times in the normal direction of rotation. The gear tooth contact pattern is indicated by Prussian Blue applied to the pinion before assembly.





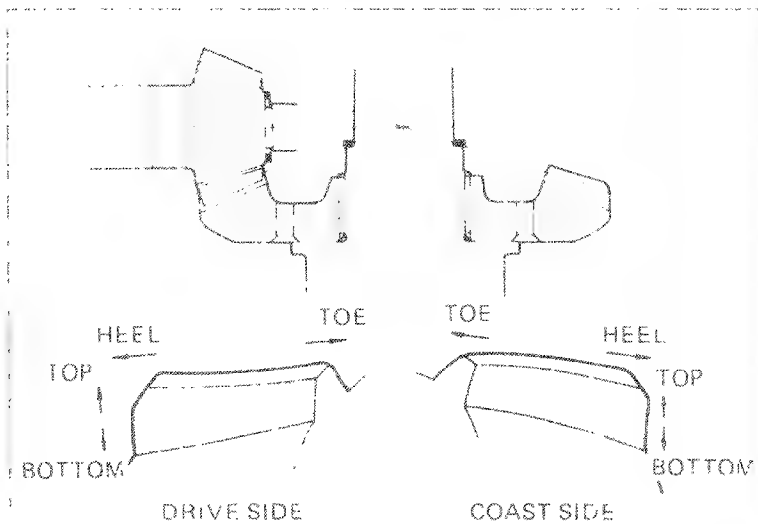
## REAR WHEEL BRAKE/FINAL DRIVE/ SUSPENSION



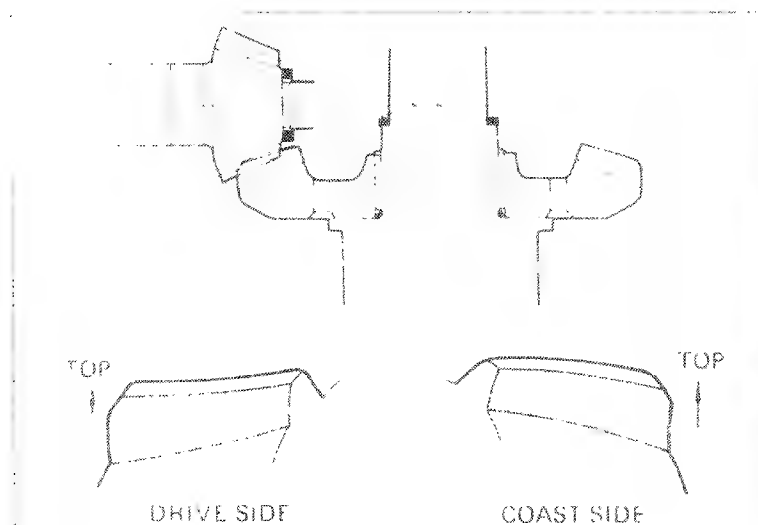
**HONDA**  
GL500  
GL500 INTERSTATE

Contact pattern of the Prussian Blue is transferred to the approximate center of each tooth flank properly extending toward the toe side.

If the patterns are not correct, adjust contact by replacing the pinion shim. (The ring gear shim affects the contact patterns very little)

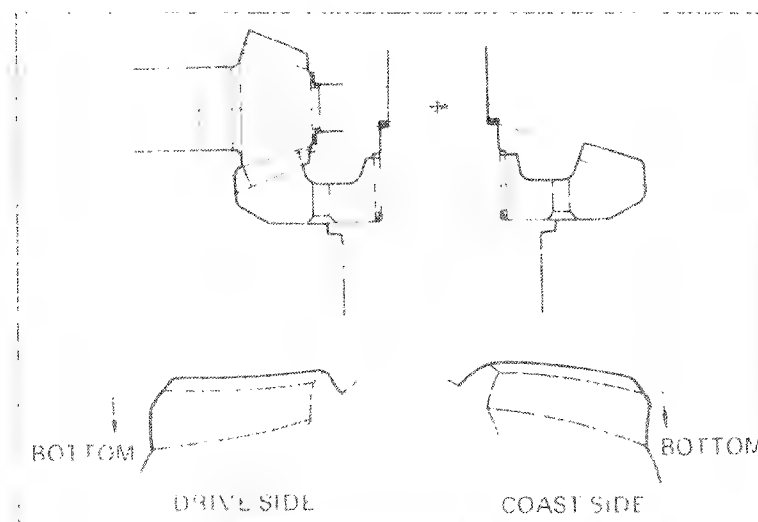


The pattern will be too high on both the drive and coast sides if the shim is too thick.  
Decrease shim size to correct the pattern.



The pattern will be too low on both the drive and coast sides if the shim is too thin.

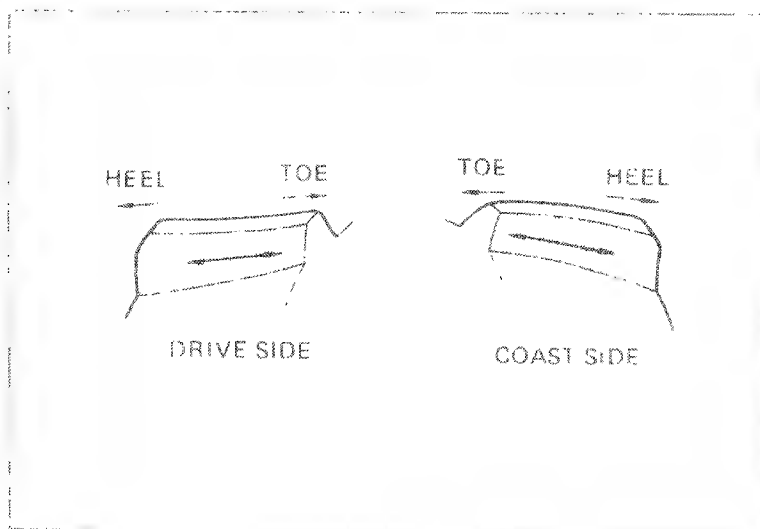
Use a thicker shim to correct the pattern.



The pattern will be shifted toward the toe or heel on both sides if the bearings are not installed squarely. Reinstall the bearings to correct the pattern.

**NOTE**

Use of a worn pinion on a new ring gear or a worn ring gear on a new pinion can cause improper contact pattern.



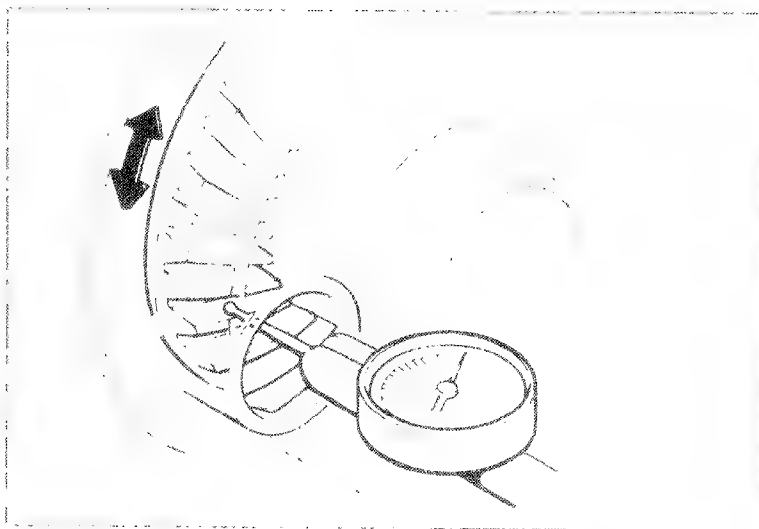
**BACKLASH INSPECTION AND ADJUSTMENT**

Measure the backlash (Page 14-27)

If the backlash is excessive, replace the ring gear shim with a thinner one. If the backlash is too small, replace the ring gear shim with a thicker one.

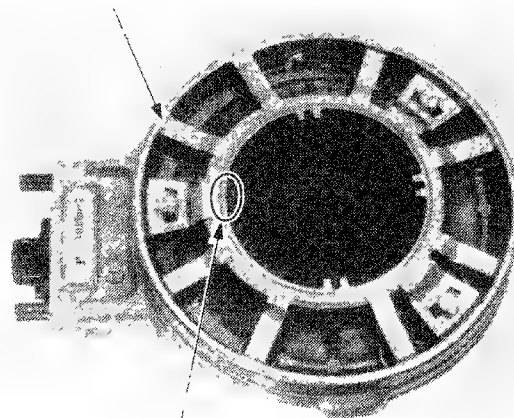
**NOTE**

Backlash adjustment should be made with the ring gear shim as the pinion shim hardly affects the backlash.



Install the dust guard plate and torque the bolts. Bend the tabs of the lock plates up to prevent the bolts from being turned out during operation. Bend one of the four ring gear bearing retainer lock tabs.

DUST GUARD PLATE



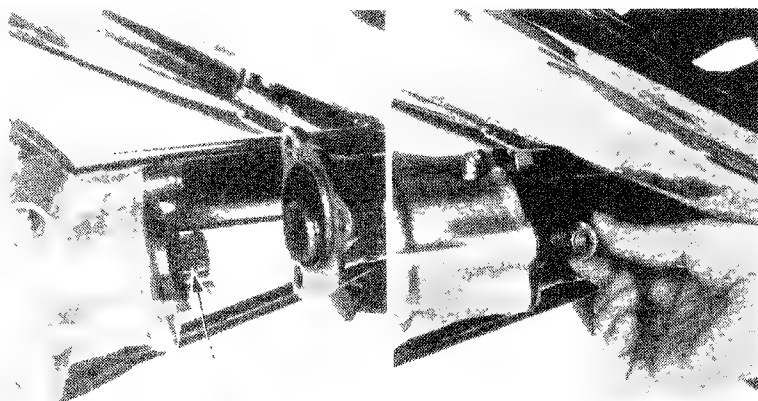
LOCK PLATE



## FINAL GEAR CASE INSTALLATION

1. Coat the splines of the propeller shaft and ring gear shaft with MULTIPURPOSE NLGI No. 2 (molybdenum disulfide) additive GREASE, and mesh.

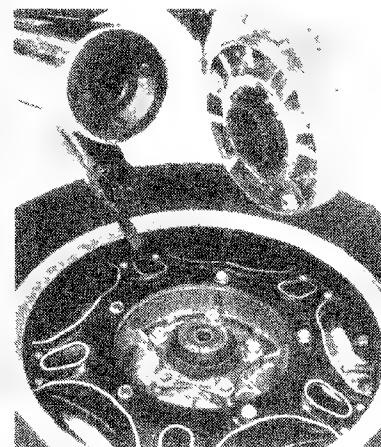
2. Temporarily install the gear case on the swingarm.



MULTIPURPOSE NLGI  
No. 2 (MoS<sub>2</sub> ADDITIVE)

3. Push the pinion collar into the ring gear shaft.

Apply MULTIPURPOSE NLGI No. 2 (molybdenum disulfide) additive GREASE to the splines of the propeller and ring gear shaft.



4. Tighten the axle nut. (Page 14-9.)

5. Tighten the final gear case nuts.

TORQUE: 45–70 N·m (4.5–7.0 kg-m,  
33–51 ft-lb)

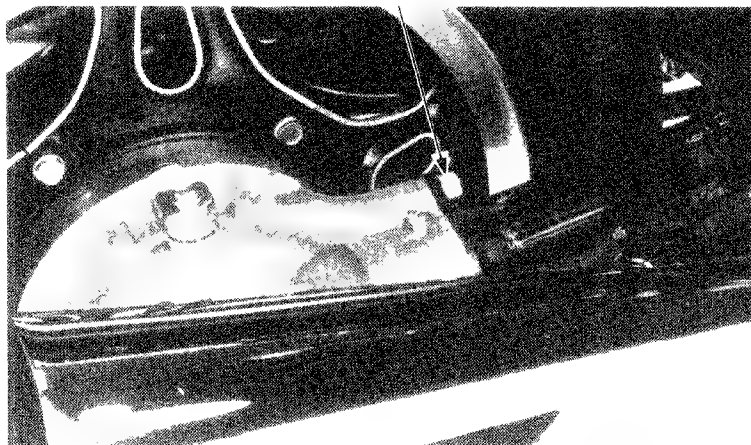
6. Tighten the axle nut.

TORQUE: 50–80 N·m (5.0–8.0 kg-m,  
36–58 ft-lb)

7. Tighten the axle pinch bolt.

TORQUE: 20–30 N·m (2.0–3.0 kg-m,  
14–22 ft-lb)

## FINAL GEAR CASE NUT

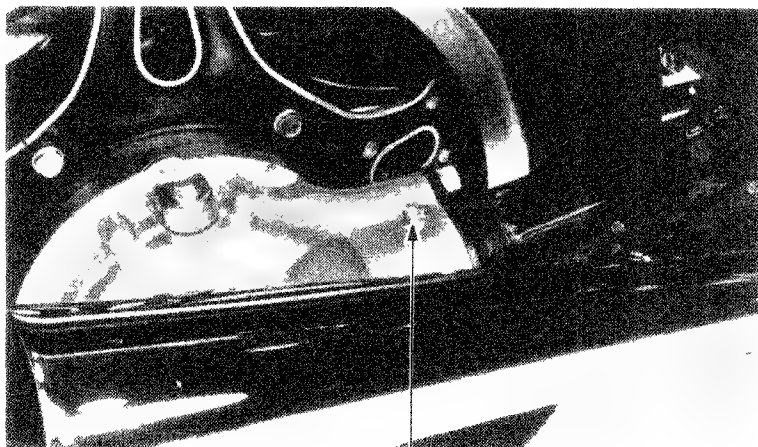




### PINION GEAR LUBRICATION

Apply lithium based multi-purpose grease through the grease fitting.

GREASE QUANTITY: 45 cc approx



GREASE FITTING

### FILLING FINAL GEAR CASE

Place the motorcycle on its center stand.

Make sure that the drain bolt is tightened.

Remove the oil filler cap.

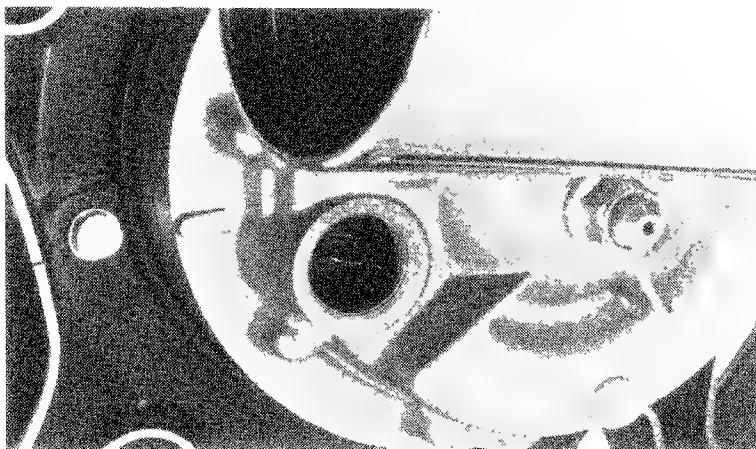
Pour the specified amount of recommended oil into the filler neck.

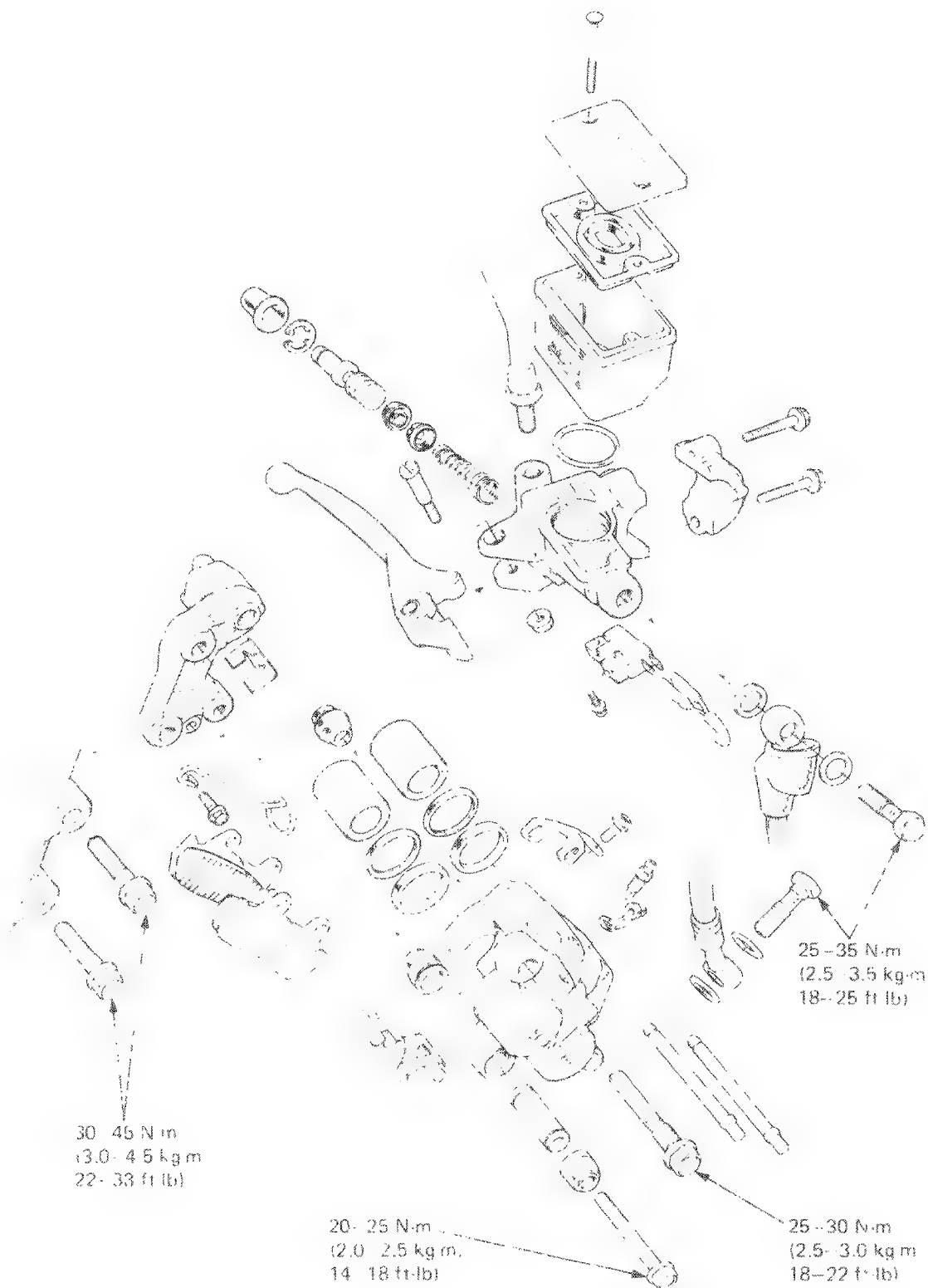
RECOMMENDED OIL: HYPOID GEAR OIL

Over 5°C SAE 90

Below 5°C SAE 80

OIL CAPACITY: 160-180 cc







**HONDA**  
GL500  
GL500 INTERSTATE

# 15. HYDRAULIC BRAKE

|                                          |      |                       |      |
|------------------------------------------|------|-----------------------|------|
| SERVICE INFORMATION                      | 15-1 | BRAKE PADS/DISC PLATE | 15-3 |
| TROUBLESHOOTING                          | 15-1 | BRAKE MASTER CYLINDER | 15-6 |
| BRAKE FLUID REPLACEMENT/<br>AIR BLEEDING | 15-2 | BRAKE CALIPER         | 15-8 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- The front brake can be removed without disconnecting the hydraulic system. Once the hydraulic systems have been opened, or if the brakes feel spongy, the system must be bled.
- Do not allow foreign material to enter the system when filling the reservoir.
- Avoid spilling brake fluid on painted surfaces or instrument lenses, as severe damage will result.
- Always check brake operation before riding the motorcycle.

### TOOL

Special  
Snap Ring Pliers 07914-3230001

### TORQUE VALUES

|                                |                                       |
|--------------------------------|---------------------------------------|
| Brake hose bolt                | 25-35 N·m (2.5-3.5 kg-m, 18-25 ft-lb) |
| Front brake caliper mount bolt | 35-45 N·m (3.5-4.5 kg-m, 25-33 ft-lb) |
| Front brake caliper pivot bolt | 25-30 N·m (2.5-3.0 kg-m, 18-22 ft-lb) |
| Front brake caliper bolt       | 20-25 N·m (2.0-2.5 kg-m, 14-18 ft-lb) |

### SPECIFICATIONS

|                       |        | Unit : mm (in)                |                 |
|-----------------------|--------|-------------------------------|-----------------|
| Item                  |        | Standard                      | Service limit   |
| Disc thickness        | GL500  | 6.9-7.1 (0.27-0.28)           | 6.0 (0.24)      |
|                       | GL500I | 4.9-5.1 (0.19-0.20)           | 4.0 (0.16)      |
| Disc runout           |        |                               | 0.3 (0.01)      |
| Master cylinder I.D.  | GL500  | 15.870-15.913 (0.6248-0.6265) | 15.925 (0.6270) |
|                       | GL500I | 14.000-14.043 (0.5512-0.5529) | 14.055 (0.5533) |
| Master piston O.D.    | GL500  | 15.827-15.854 (0.6231-0.6242) | 15.815 (0.6226) |
|                       | GL500I | 13.957-13.984 (0.5495-0.5506) | 13.945 (0.5490) |
| Caliper piston O.D.   |        | 30.148-30.198 (1.1869-1.1889) | 30.140 (1.1866) |
| Caliper cylinder I.D. |        | 30.230-30.280 (1.1901-1.1921) | 30.290 (1.1925) |

## TROUBLESHOOTING

### Poor Brake Performance

1. Air bubbles in hydraulic system
2. Worn brake pads
2. Pads dirty or glazed
4. Hydraulic system leaking



## HYDRAULIC DISC BRAKE

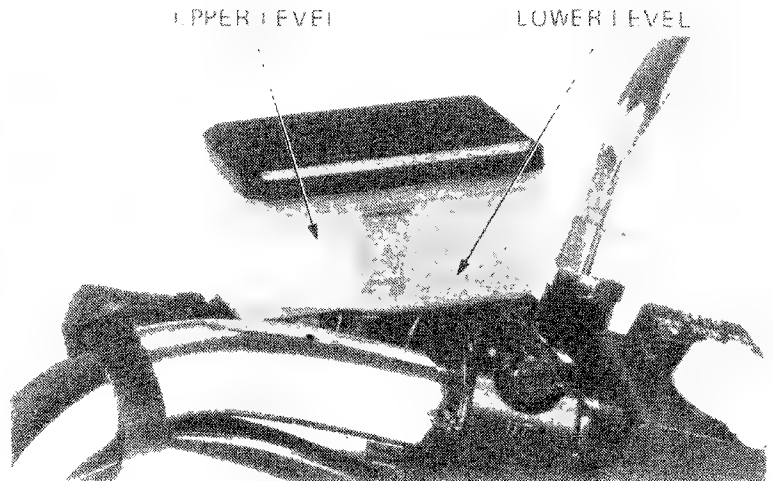
### BRAKE FLUID REPLACEMENT/ AIR BLEEDING

Check the fluid level in the fluid reservoir, and bleed the system.

#### CAUTION

Do not use a brake fluid other than DOT-3 brake fluid. Do not use a brake fluid with a low boiling point. Do not use a brake fluid with a low viscosity.

Do not use a brake fluid on painted surfaces. Do not use a brake fluid on surfaces which will be in contact with the rider's feet.



### BRAKE FLUID DRAINING

Remove the cap from the bleed valve. Turn the screw on the bleed valve and pump the brake lever.

Stop turning the screw when no more fluid flows out of the bleed valve.

#### WARNING

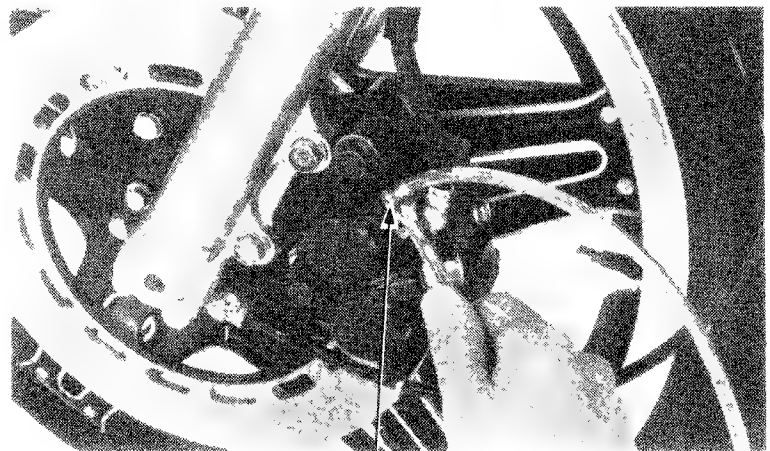
A brake disc or pad contaminated with brake fluid or grease reduces stopping power. Do not use contaminated pads and clean the disc with a high quality brake degreasing agent.

### BRAKE FLUID FILLING

#### NOTE

Use Grade DOT-3 brake fluid from a sealed container.

Turn the bleed valve, fill the reservoir, and install the cap.



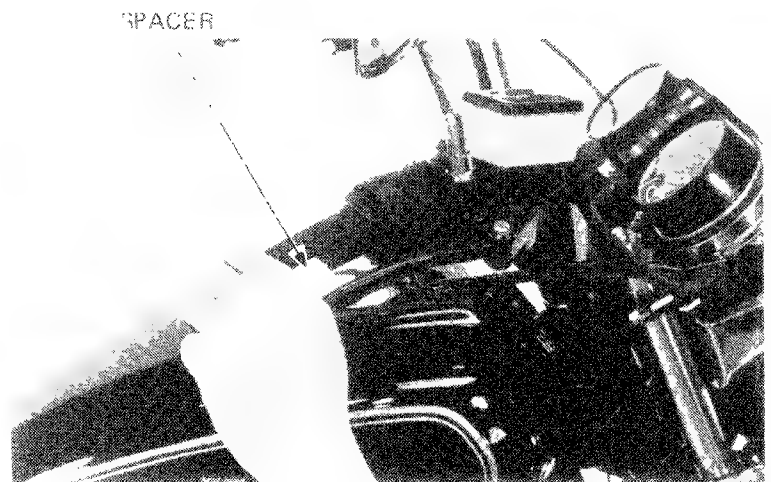
BLEED VALVE

### AIR BLEEDING

Remove the piston overtravel and brake fluid seepage. Keep a 20 mm (3/4 in) space between the lever and the indicator grip when bleeding the front brake system. Pump up the system pressure until there are no air bubbles in the fluid flowing out of the bleed or main hole and lever resistance is felt.

#### NOTE

Check the fluid level often while bleeding the brake to prevent air from being pumped into the system.







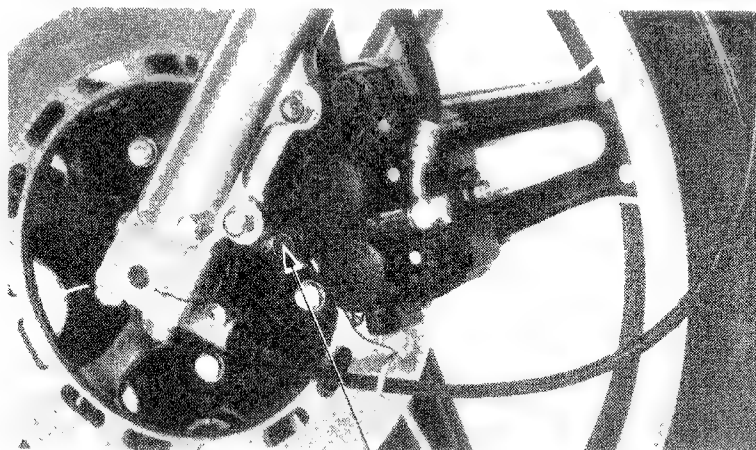
## BRAKE PADS/DISC PLATE

### PAD REPLACEMENT

#### NOTE

Always replace the brake pads in pairs to assure even disc pressure.

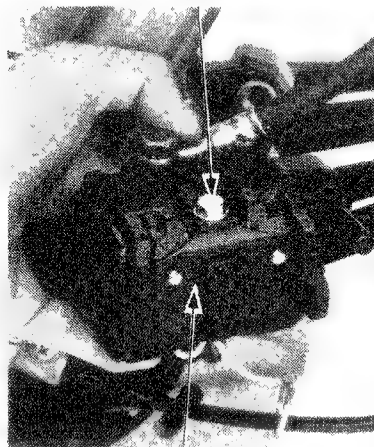
Remove the caliper bolt and pivot the caliper up out of the way.



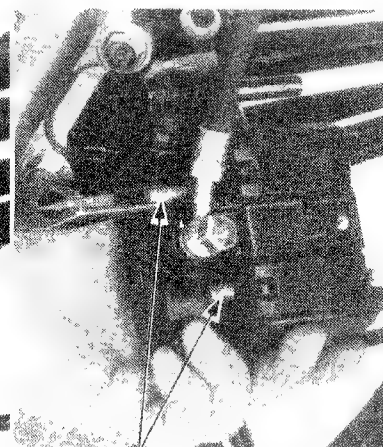
CALIPER BOLT

Remove the retainer bolt and the pad pin retainer. Pull the pad pins out of the caliper. Remove the brake pads.

RETAINER BOLT



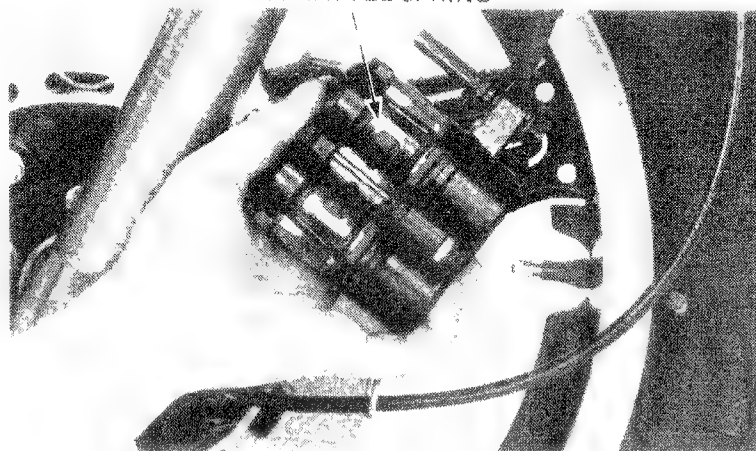
RETAINER

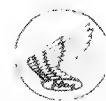


PAD PINS

Position the anti-rattle spring in the caliper as shown.

ANTI-RATTLE SPRING

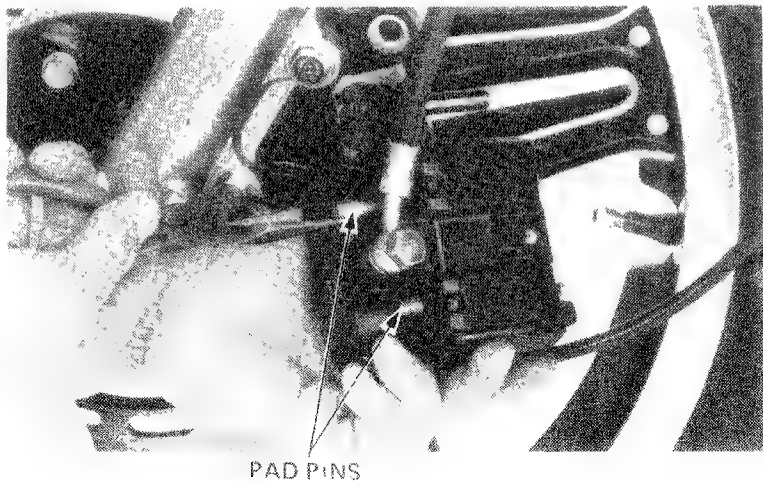




Install the new pads in the caliper.  
Install the pad pins.

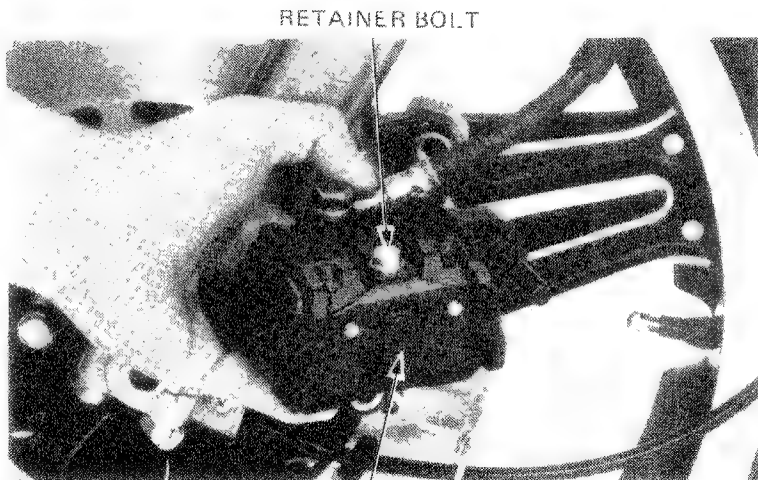
## NOTE

Install one pad pin first then install the other pin by pushing the pads against the caliper to depress the anti-rattle spring.



PAD PINS

Slide the pad pin retainer over the pad pins through the larger side of the slots in the retainer and slide the retainer to secure the pad pins.  
Install the pad pin retainer bolt.



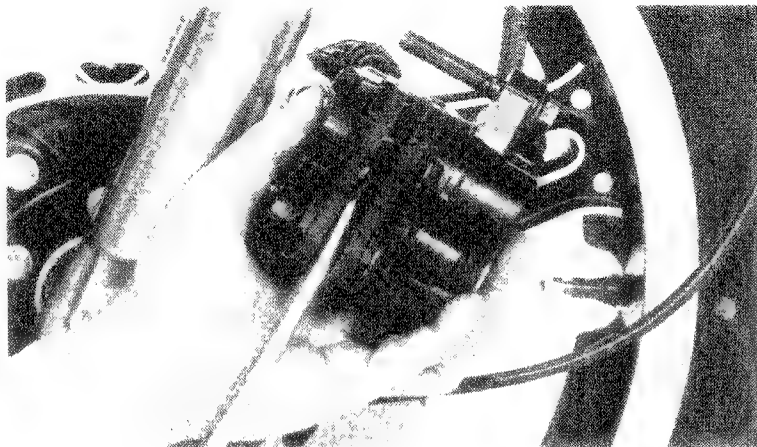
RETAINER BOLT

RETAINER

Push the piston all the way in to allow installation of new brake pads.

## NOTE

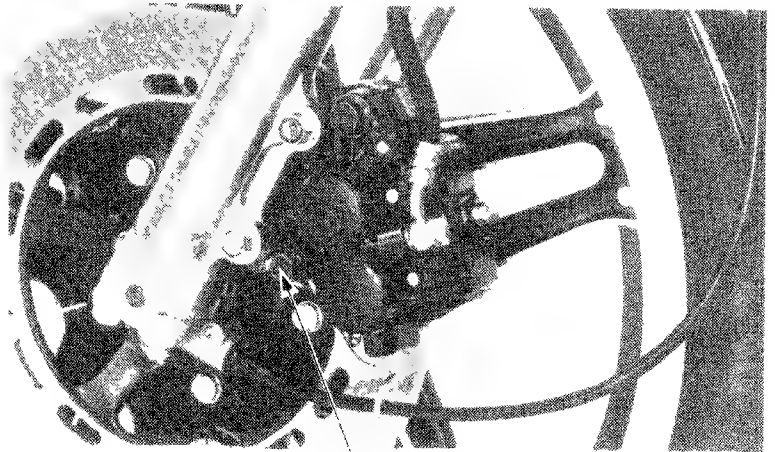
Check the brake fluid level in the brake master cylinder reservoir as such operation causes the level to rise.





Lower the caliper down so the brake disc is positioned between the pads, making sure not to damage the pads.

Install the caliper bolt and tighten it.  
TORQUE: 20–25 N·m (2.0–2.5 kg-m,  
14–18 ft-lb)



CALIPER BOLT

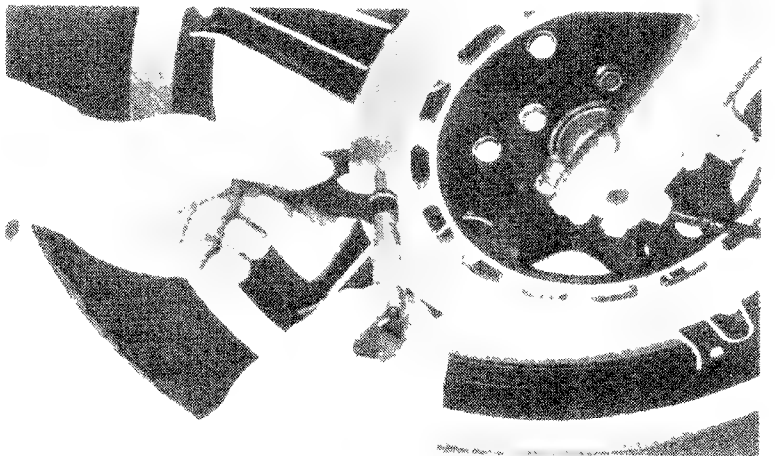
#### BRAKE DISC THICKNESS

Measure the brake disc thickness.

**SERVICE LIMIT:**

STANDARD MODEL: 6.0 mm (0.24 in)

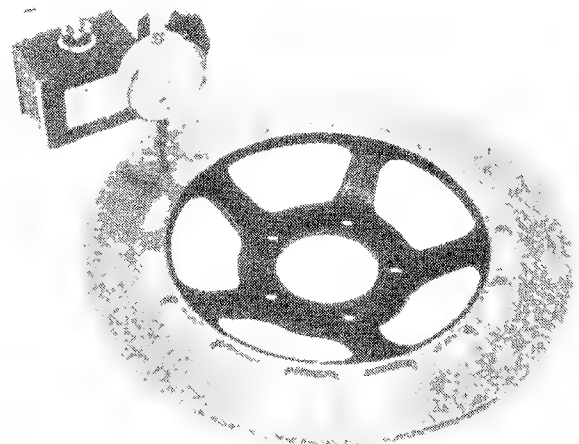
INTERSTATE MODEL: 4.0 mm (0.16 in)



#### BRAKE DISC WARPAGE

Measure the brake disc warpage.

**SERVICE LIMIT:** 0.30 mm (0.012 in)





## HYDRAULIC DISC BRAKE

### BRAKE MASTER CYLINDER

#### MASTER CYLINDER DISASSEMBLY

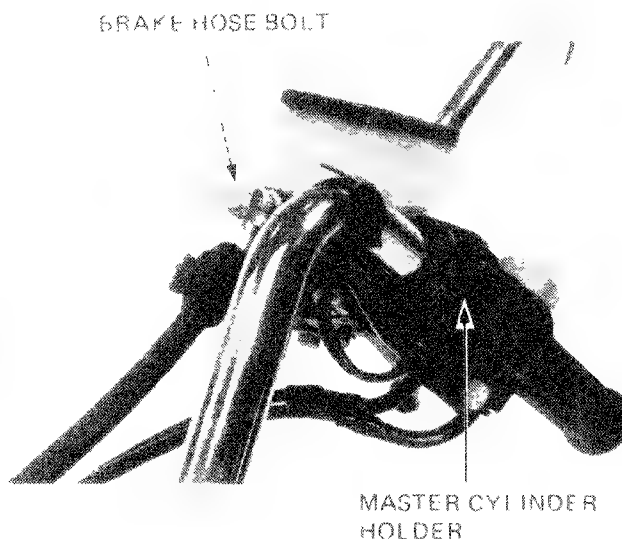
Remove the rear view mirror and brake lever.

Drain the brake fluid from the hydraulic system.  
Remove the brake hose bolt and disconnect the brake hose.

#### CAUTION

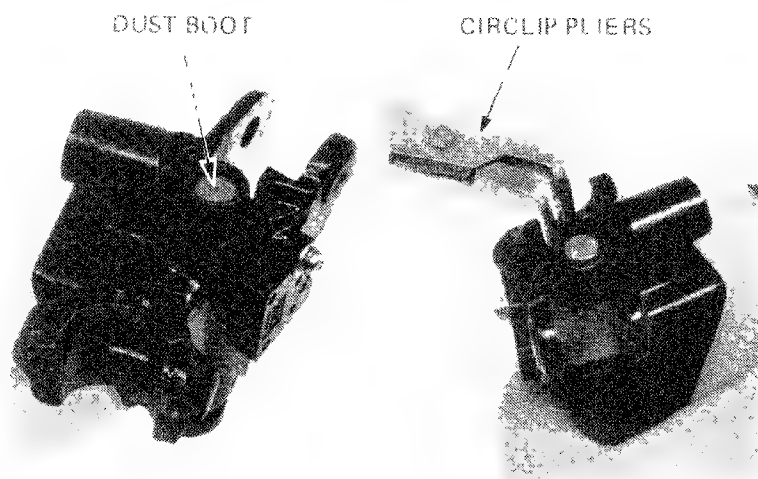
*To prevent spilling of the fluid on painted surfaces,  
Place a rag over the fuel tank and instrument  
whenever the brake system is serviced.*

Remove the master cylinder.



Remove the dust boot.

Remove the circlip.  
Clean the interior of the master cylinder and  
reservoir with brake fluid.



#### MASTER CYLINDER I.D. INSPECTION

Measure the master piston bore I.D.

#### SERVICE LIMIT:

GL500: 15.925 mm (0.6270 in)

GL500: 14.055 mm (0.5533 in)

Look for scores, scratches, nicks or other  
wear.





## MASTER PISTON O.D. INSPECTION

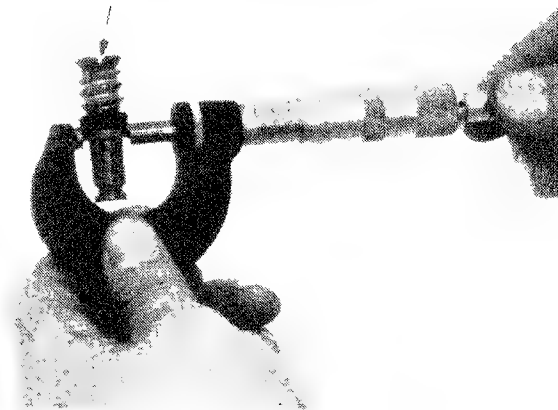
Measure the master piston O.D.

### SERVICE LIMIT

GL500: 15.815 mm (0.6225 in)

GL500I: 13.945 mm (0.5490 in)

MASTER PISTON



## MASTER CYLINDER ASSEMBLY

### CAUTION

*Replace the master cylinder piston, cylinder and spring as a set.*

Dip the piston cup in brake fluid or coat with silicon grease before assembly.

Install the master cylinder on the handlebar.

(Page 13-7)

Connect the brake hose and install the brake lever.

Bleed the front brake system. (Page 15-2).





## BRAKE CALIPER

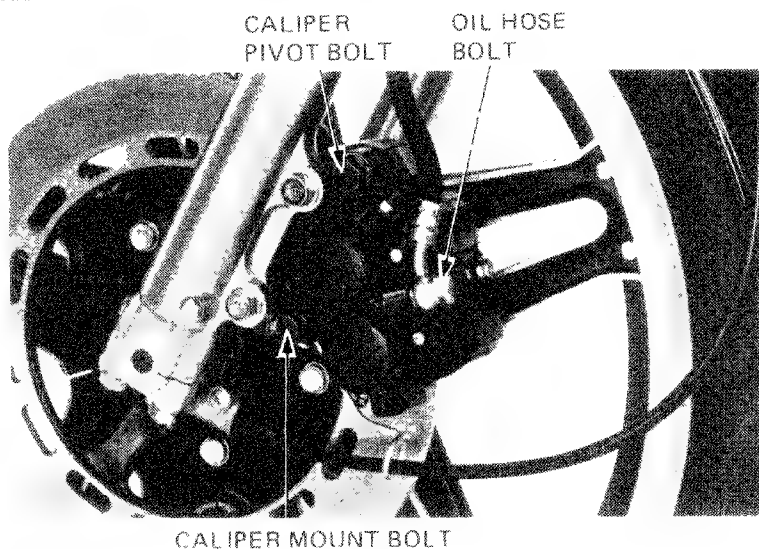
### CALIPER REMOVAL

Drain the brake hydraulic system.  
Disconnect the brake hose.

#### NOTE

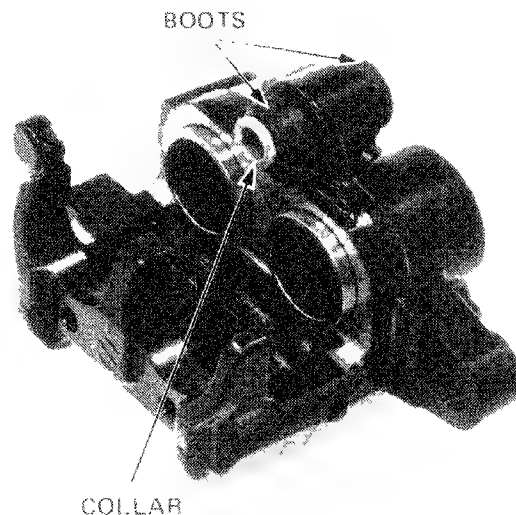
Avoid spilling brake fluid on painted surfaces,  
the front forks and disc plate.

To remove the brake caliper, remove the caliper  
pivot bolt and mount bolt.



### CALIPER DISASSEMBLY

Remove the pads and anti-rattle spring.  
Remove the caliper pivot collar and boots.



Position the caliper with the piston down and apply  
about 100 psi of air pressure to the fluid inlet.

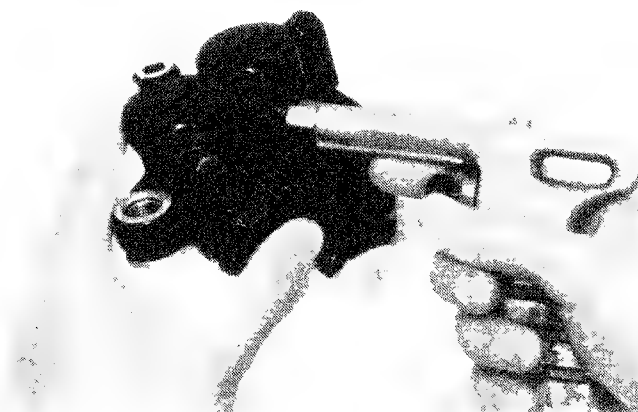
#### WARNING

*Do not use high pressure air or bring the  
nozzle too close to the inlet.*

#### NOTE

Place a shop towel over the pistons to prevent  
the pistons from becoming projectiles.

Inspect the piston and cylinders for scoring  
and other damage and replace if necessary.

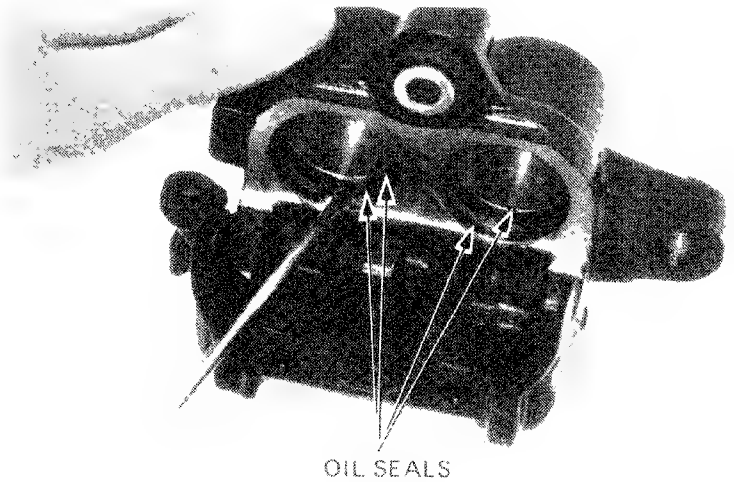




Push the oil seals in and then lift them out.  
Clean the oil seal grooves with brake fluid.

**CAUTION**

*Do not damage the piston sliding surfaces.*



**CALIPER PISTON O.D. INSPECTION**

Check the piston for scoring, scratches or other faults. Measure the piston diameter with a micrometer.

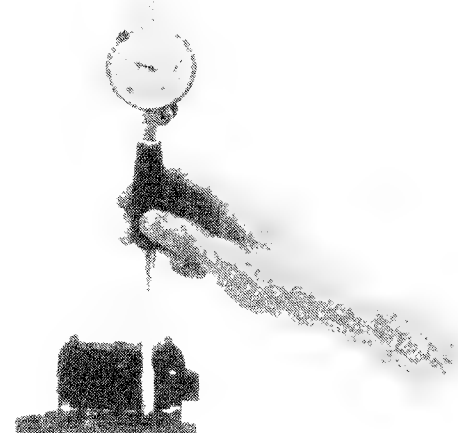
**SERVICE LIMIT:** 30.140 mm (1.1866 in)



**CALIPER CYLINDER I.D. INSPECTION**

Check the caliper cylinder for scoring, scratches or other faults. Measure the caliper cylinder bore.

**SERVICE LIMIT:** 30.290 mm (1.1925 in)







## HYDRAULIC DISC BRAKE

### CALIPER ASSEMBLY

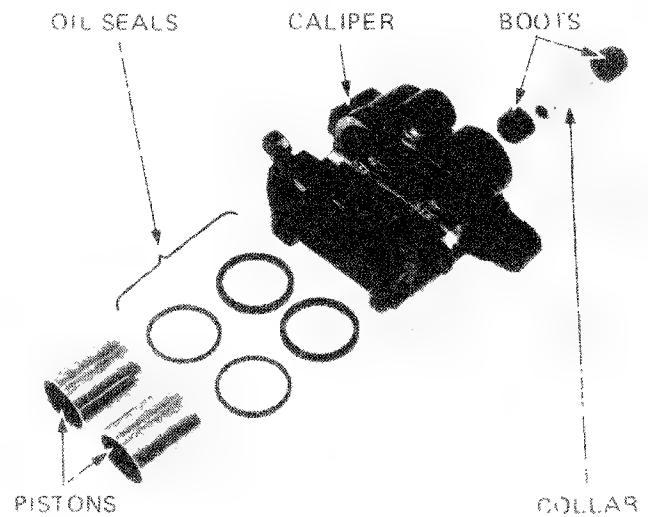
The oil seals must be replaced whenever the caliper is disassembled.

Coat the oil seals with silicon grease or brake fluid before assembly.

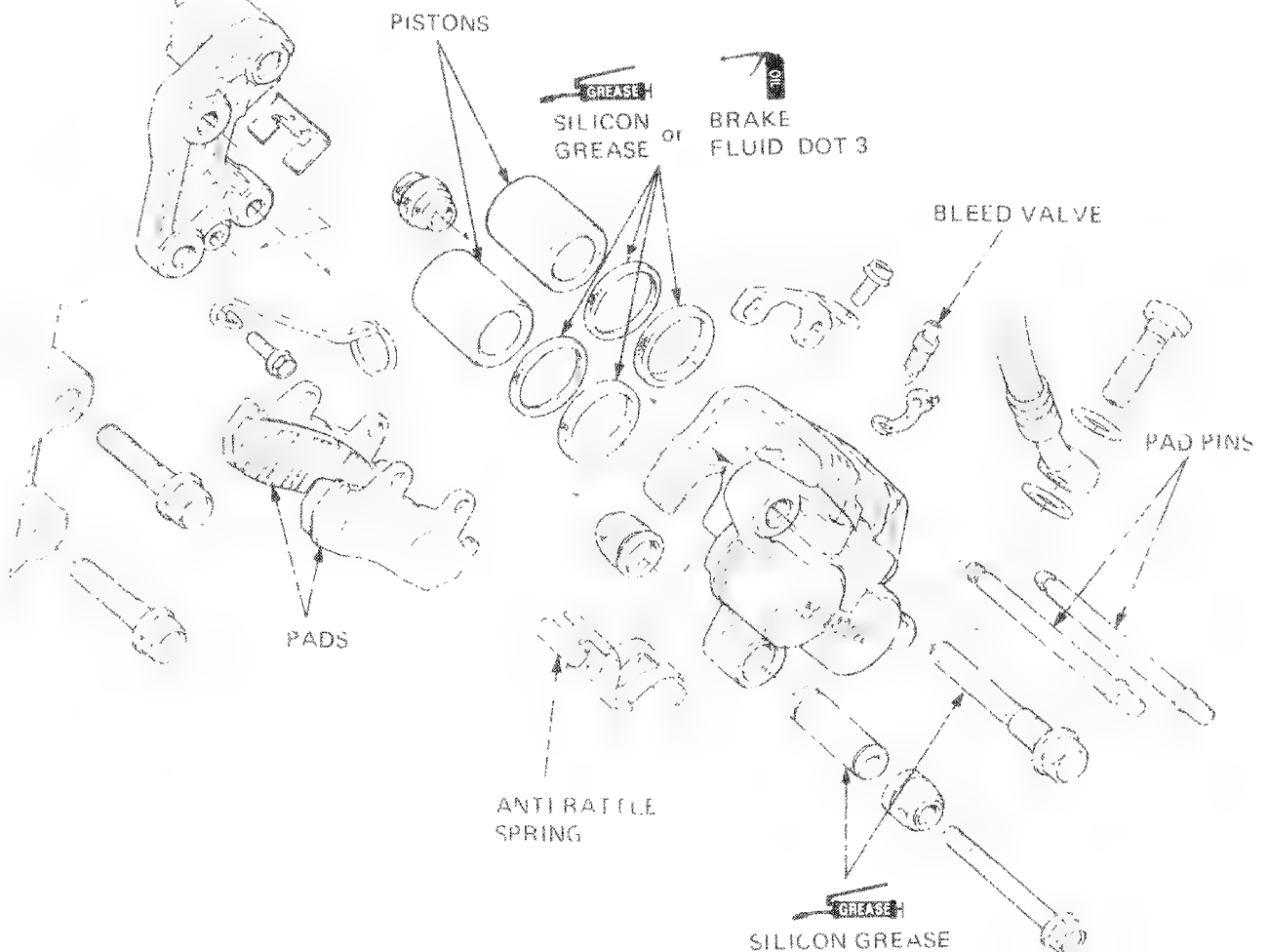
Install the pistons with the dished ends toward the pad side.

Install the boots and collar making sure that the boots are seated in the collar and caliper grooves properly.

Install the anti rattle spring and the pads.



### CALIPER BRACKET



## CALIPER INSTALLATION

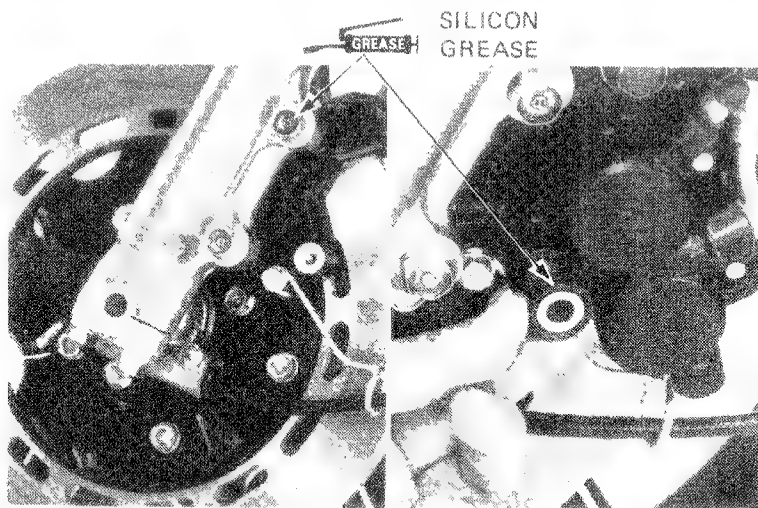
Inspect the condition of the caliper pivot bolt boot.

Apply silicon grease to the caliper pivot bolt, and boot (Page 15-8).

Slide the caliper assembly over the brake disc so that the disc is positioned between the pads.

### CAUTION

*Do not force it to damage the parts.*



Install the caliper pivot bolt.

**TORQUE: 25–30 N·m**

(2.5–3.0 kg·m, 18–22 ft-lb)

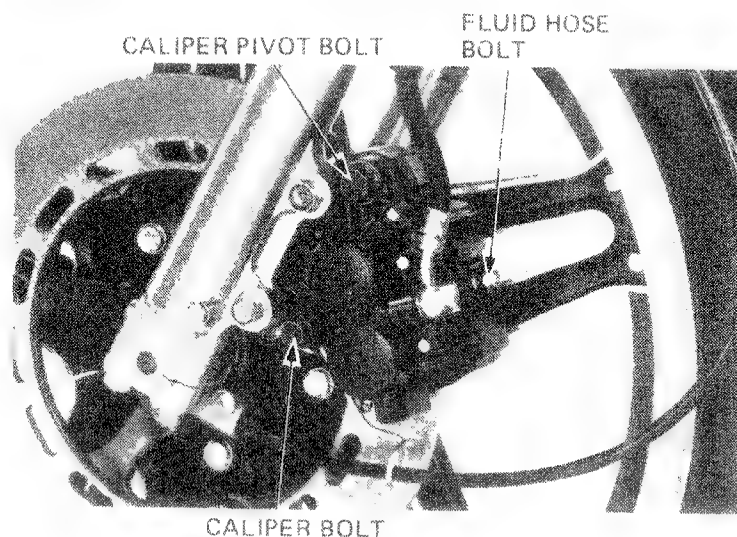
Install the caliper bolt.

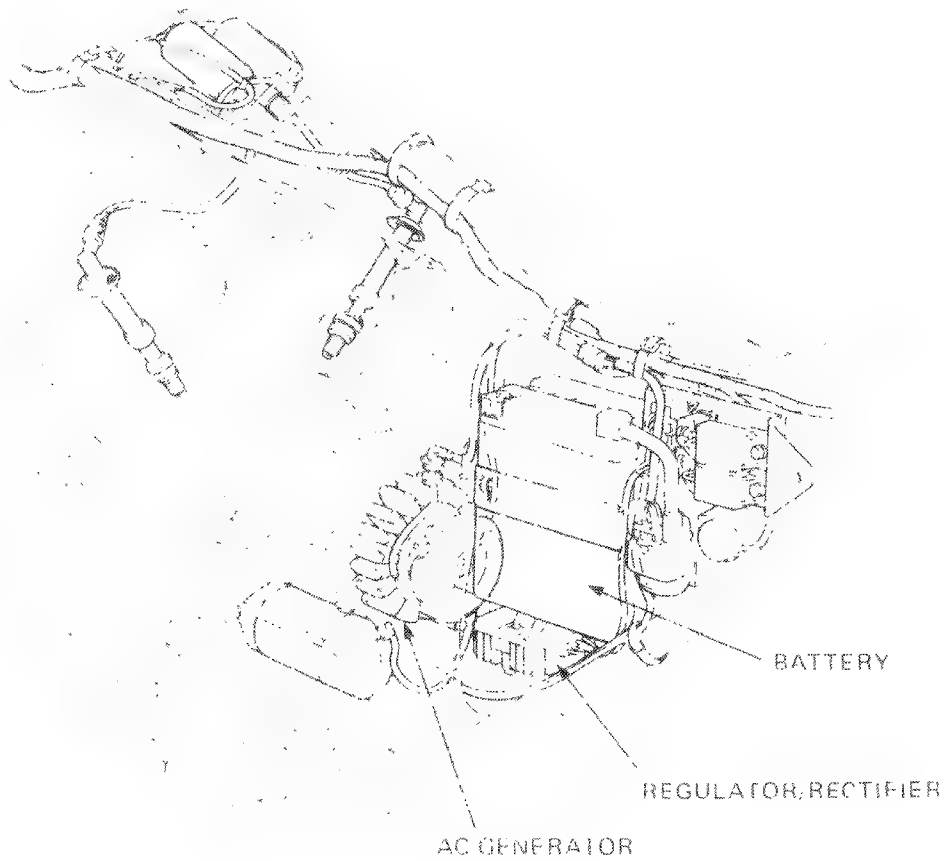
**TORQUE: 25–25 N·m**

(2.0–2.5 kg·m, 14–18 ft-lb)

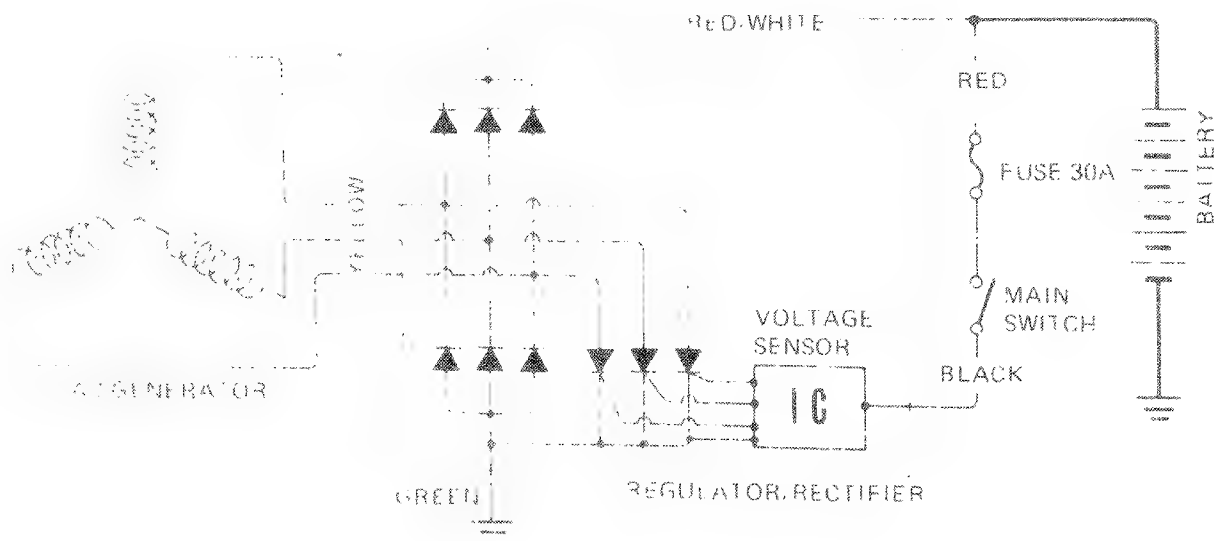
Reconnect the brake hose.

Fill the brake fluid reservoir and bleed the front brake system (Page 15-2).





BATTERY CHARGING DIAGRAM



|                     |      |
|---------------------|------|
| SERVICE INFORMATION | 16-1 |
| TROUBLESHOOTING     | 16-1 |
| BATTERY             | 16-2 |
| CHARGING SYSTEM     | 16-3 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- The battery fluid level should be checked regularly. Fill with distilled water as necessary.
- Quick charge the battery only in an emergency. Slow-charging is preferred.
- Remove the battery from the motorcycle for charging. If the battery must be charged on the motorcycle, disconnect the battery cables.

#### **WARNING**

*Do not smoke or have flames near a charging battery. The gas produced by a battery is highly flammable and can explode.*

- For AC generator removal and installation, refer to section 8.
- All charging system components can be tested on the motorcycle.

### SPECIFICATIONS

|                   |                  |                                                    |
|-------------------|------------------|----------------------------------------------------|
| Battery           | Capacity         | 12V 14 ampere-hours                                |
|                   | Specific gravity | 1.28-20 C (68°F)                                   |
|                   | Charging rate    | 1.4 amperes maximum                                |
| AC generator      | Capacity         | High beam: 18 amperes minimum 5,000 rpm (14 volts) |
| Voltage regulator | Type             | Transistorized non-adjustable                      |

## TROUBLESHOOTING

#### No power - key turned on

1. Dead battery
  - a. Low fluid level
  - b. Low specific gravity
2. Charging system failure
3. Disconnected battery cable
4. Main fuse burned out
5. Faulty ignition switch

#### Low power - key turned On.

1. Weak battery
  - a. Low fluid level
  - b. Low specific gravity
2. Charging system failure
3. Loose battery connection

#### Low power - engine running.

1. Battery undercharged
  - a. Low fluid level
  - b. One or more dead cells
2. Charging system failure

#### Intermittent power:

1. Loose battery connection
2. Loose charging system connection
3. Loose starting system connection
4. Loose connection or short circuit in ignition system
5. Loose connection or short circuit in lighting system

#### Charging system failure:

1. Loose, broken, or shorted wire or connection
2. Faulty voltage regulator
3. Faulty silicon rectifier
4. Faulty AC generator

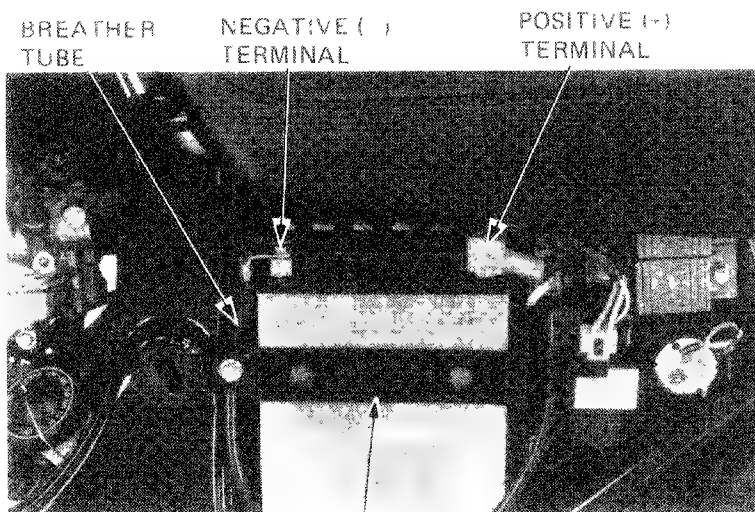


## BATTERY/CHARGING SYSTEM

### BATTERY

#### REMOVAL

1. Disconnect the ground cable and remove the battery holder.
2. Disconnect the positive (+) cable at the battery.
3. Disconnect the battery breather tube, and remove the battery.



BATTERY HOLDER

#### TESTING SPECIFIC GRAVITY

Test each cell with a hydrometer.

SPECIFIC GRAVITY: (20°C, 68°F)

|               |               |
|---------------|---------------|
| 1.270 - 1.290 | Fully charged |
| Below 1.260   | Undercharged  |

#### NOTE

- The battery must be recharged if the specific gravity is below 1.230.
- The specific gravity varies with the temperature as shown in the table.
- Replace the battery if sulfation is evident or if the space below the cell plates is filled with sediment.

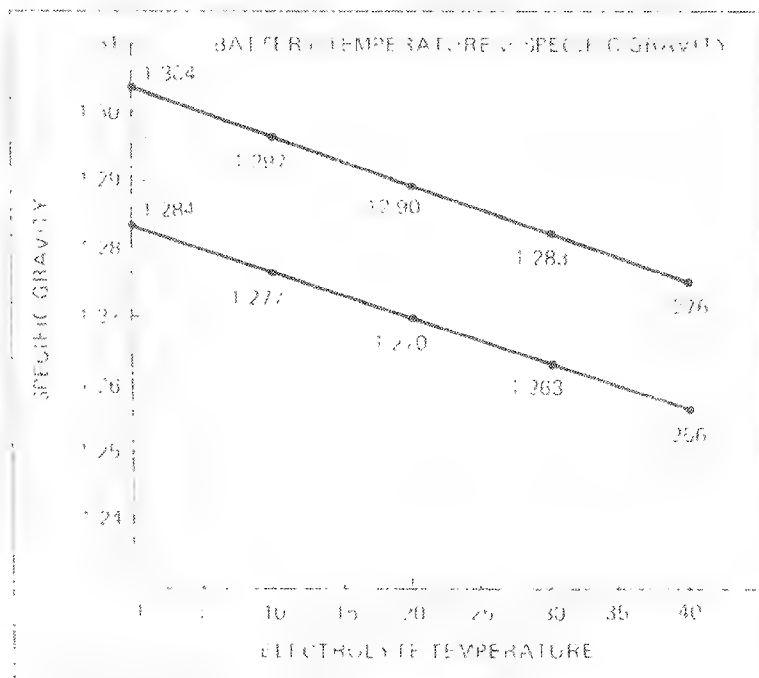
#### WARNING

The battery contains sulfuric acid. Avoid contact with skin, eyes, or clothing.  
Antidote: Flush with water and get prompt medical attention.

HYDROMETER



ELECTROLYTE



Specific gravity changes by 0.007 for every 10°C.

## BATTERY CHARGING

Remove the battery cell caps.

Connect the charger positive (+) cable to the battery positive (+) terminal.

Connect the charger negative (-) cable to the battery negative (-) terminal.

**Charging current:**

1.4 amperes max.

**Charging:**

Charge the battery until specific gravity is 1.270–1.290 at 20°C (68°F).

### WARNING

- Before charging a battery, remove the cap from each cell.
- Keep flames and sparks away from a charging battery.
- Turn power ON/OFF at the charger, not at the battery terminals.
- Discontinue charging if the electrolyte temperature exceeds 45°C (113°F).

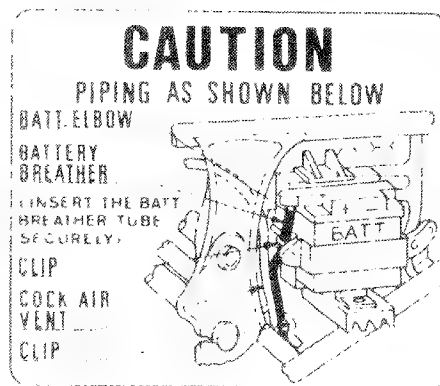
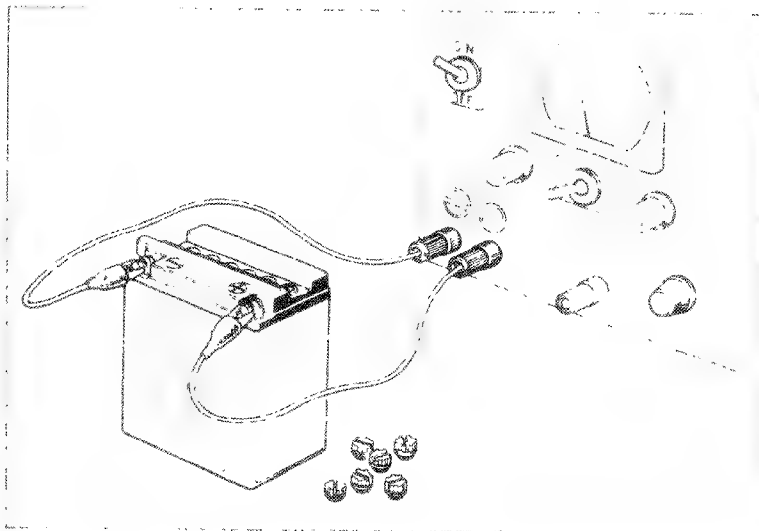
### CAUTION

Quick-charging should only be done in an emergency; slow-charging is preferred.

After installing the battery, coat the terminals with clean grease before re-connecting the battery cables.

### CAUTION

Route the breather tube as shown on the battery caution label.



## CHARGING SYSTEM

### CHARGING OUTPUT TEST

Warm up the engine before taking readings.

Disconnect the main fuse coupler.

Open the main fuse cover and remove the main fuse. Then reconnect the coupler.

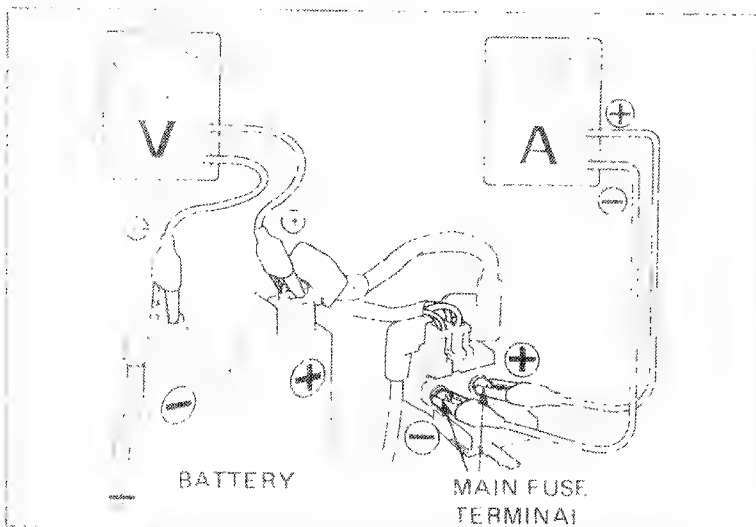
Connect a voltmeter and ammeter as shown.

**NOTE:**

Use a fully charged battery to check the charging system output.

### TECHNICAL DATA

| MAIN SWITCH | LIGHTING SWITCH | CHARGING RPM | 5,000 rpm                       |
|-------------|-----------------|--------------|---------------------------------|
| ON          | High beam       | 1,600 rpm    | (5 amperes minimum, 14.0 volts) |

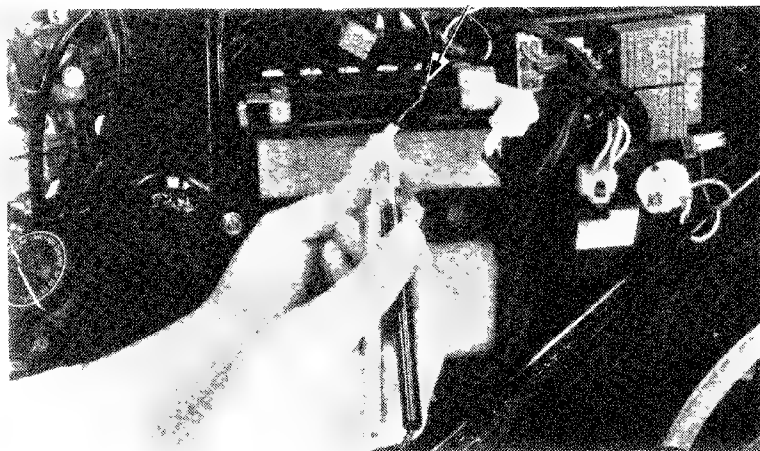




## BATTERY/CHARGING SYSTEM

### STATOR COIL CONTINUITY TEST

Check the yellow leads to the AC generator stator for continuity with each other. Replace the stator if any yellow lead is not continuous with the others or if any lead has continuity to ground. (Page 8-4)



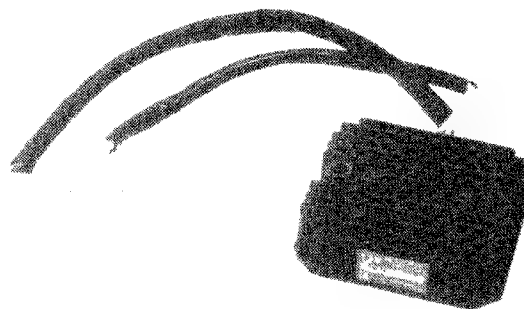
AC GENERATOR WIRE

### VOLTAGE REGULATOR/RECTIFIER TEST

Check the resistances between the leads with an ohmmeter.

#### WARNING

*Do not use a high voltage source such as insulation resistance tester since it may damage the rectifier and give you a shock.*



#### NORMAL DIRECTION, CONTINUITY

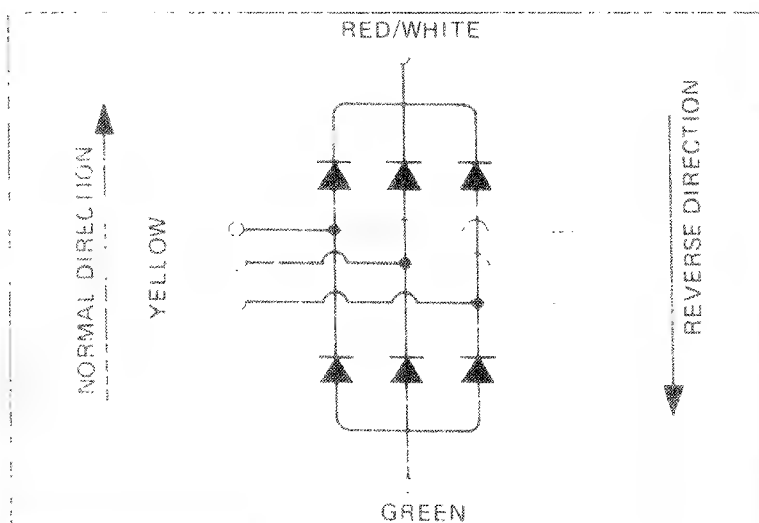
|           |         |
|-----------|---------|
| ⊕ probe   | ⊖ probe |
| YELLOW    | GREEN   |
| RED/WHITE | YELLOW  |

#### REVERSE DIRECTION, NO CONTINUITY

|         |           |
|---------|-----------|
| ⊕ probe | ⊖ probe   |
| GREEN   | YELLOW    |
| YELLOW  | RED/WHITE |

#### NOTE

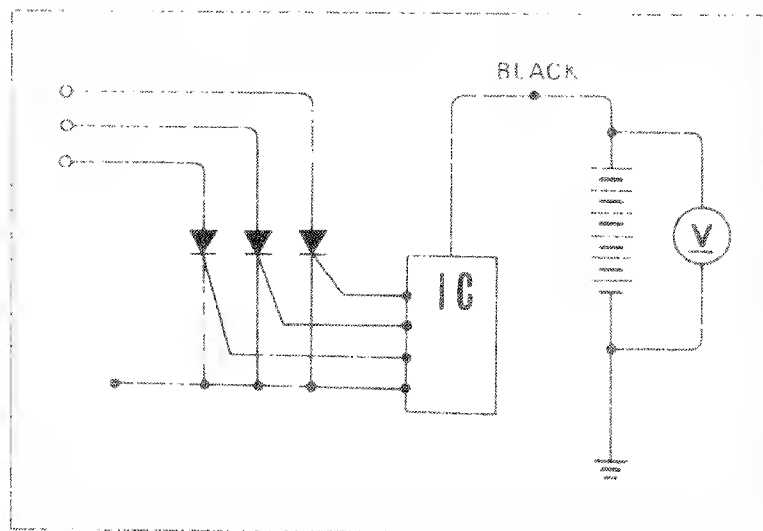
The test results shown are for a positive ground ohmmeter and the opposite results will be obtained when a negative ground ohmmeter is used.



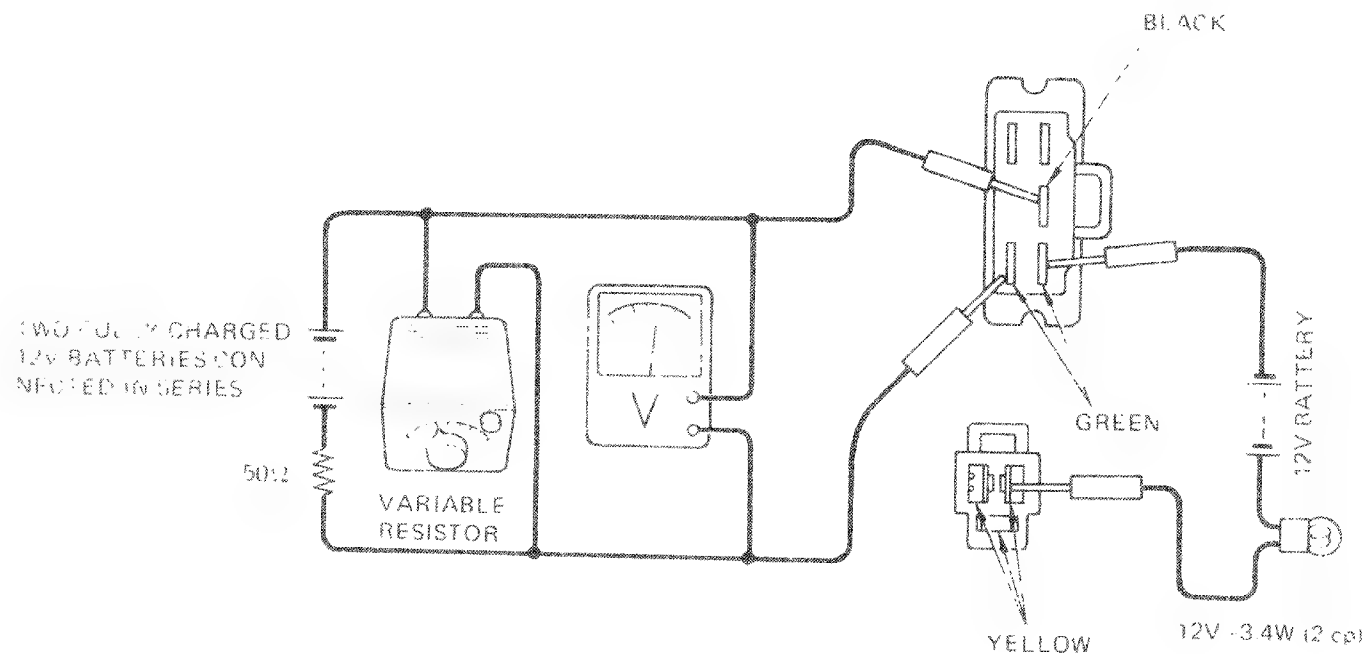


## VOLTAGE REGULATOR PERFORMANCE TEST

- Connect a voltmeter across the battery. Check regulator performance with the engine running. The regulator must divert current to ground when battery voltage reaches 14.0 ~ 15.0 V.

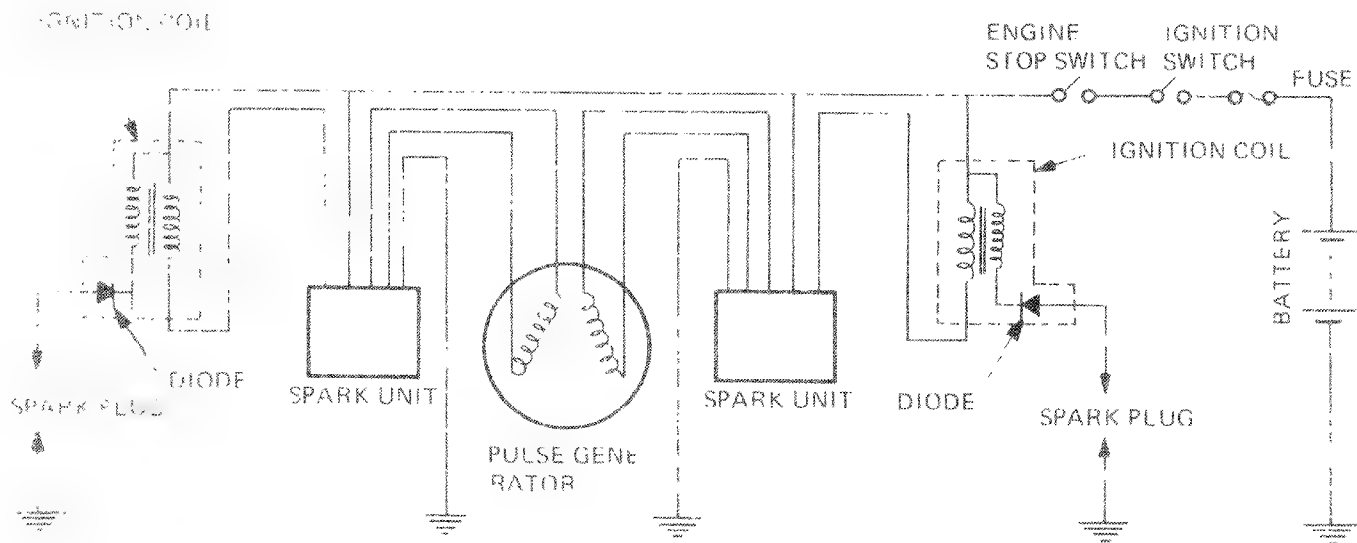
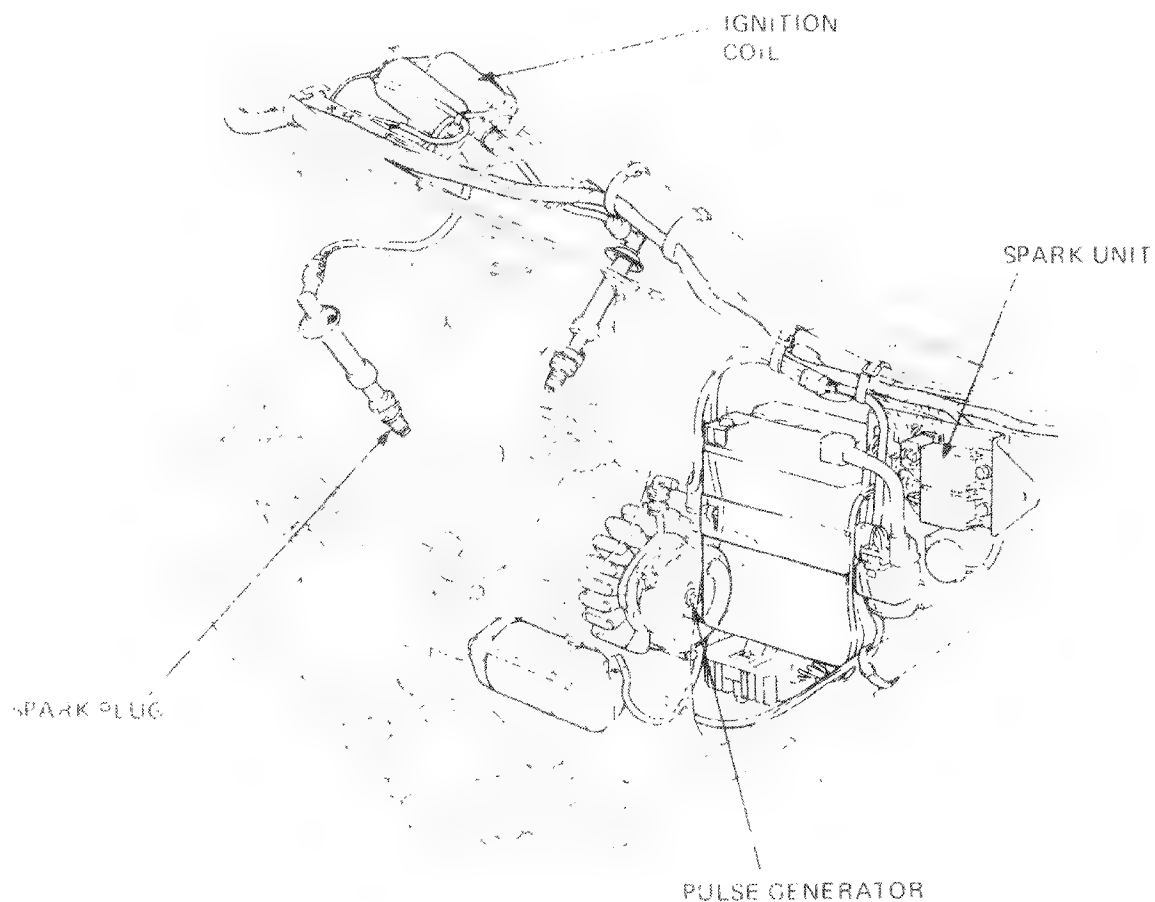


- Testing with a variable resistor
- Connect a variable resistor (0 ~ 100Ω) across the battery with a 50Ω resistance.
- Check for continuity between green and each of three yellow terminals.
- The lamp must come on when voltage reads 14 to 15V on the voltmeter by adjusting the variable resistor.





# IGNITION SYSTEM





# 17. IGNITION SYSTEM

|                                                                 |      |
|-----------------------------------------------------------------|------|
| SERVICE INFORMATION                                             | 17-1 |
| TROUBLESHOOTING                                                 | 17-1 |
| IGNITION COIL                                                   | 17-2 |
| TRANSISTORIZED IGNITION SYSTEM<br>(Pulse Generator, Spark Unit) | 17-4 |
| SPARK UNIT                                                      | 17-4 |
| SPARK ADVANCER                                                  | 17-5 |
| IGNITION TIMING CHECK                                           | 17-6 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- The TRANSISTORIZED IGNITION SYSTEM is used and no adjustments are to be made unless the pulse generator screws are loosened or the pulse generator is removed.
- To adjust the ignition timing, see Page 8-10.
- For spark plug information, see Page 3-7.

### SPECIFICATIONS

#### RECOMMENDED SPARK PLUG

|                                     | GL500 GL500I                                                                                            |                                | With optional radio (GL500I) |                                |
|-------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------|--------------------------------|
|                                     | Standard                                                                                                | For extended high speed riding | For normal condition         | For extended high speed riding |
| NGK                                 | D8EA                                                                                                    | D9EA                           | DR8ES-L                      | DR8ES                          |
| AC                                  | X24ES-U                                                                                                 | X27ES-U                        | X24ESR-U                     | X27ESR-U                       |
| Spark plug gap adjustment           | 0.6-0.7 mm (0.02-0.03 in)<br>F mark: 15° BTDC at 1,100 rpm<br>Full advance: 45 ± 1.5° BTDC at 3,000 rpm |                                |                              |                                |
| Pulse generator air gap (gap screw) | 0.45-0.65 mm (0.018-0.026 in)<br>3-point spark test: 3 mm (1.4 in.) minimum                             |                                |                              |                                |

## TROUBLESHOOTING

### Engine cranks but will not start

- Engine stop switch OFF
- No spark at plugs
- Faulty transistorized spark unit
- Faulty pulse generator

- Faulty ignition coil
- Faulty ignition switch
- Faulty spark unit
- Faulty pulse generator

### No spark at plug

- Engine stop switch OFF
- Poorly connected, broken or shorted wires
- Between ignition switch and engine stop switch
- Between spark unit and engine stop switch
- Between spark unit and ignition coil
- Between ignition coil and plug
- Between spark unit and pulse generator

### Engine starts but runs poorly

- Ignition primary circuit
- Faulty ignition coil
- Loose or bare wire
- Intermittent short circuit
- Secondary circuit
- Faulty plug
- Faulty high tension cord

### Timing advance incorrect

- Centrifugal advance faulty



## IGNITION SYSTEM

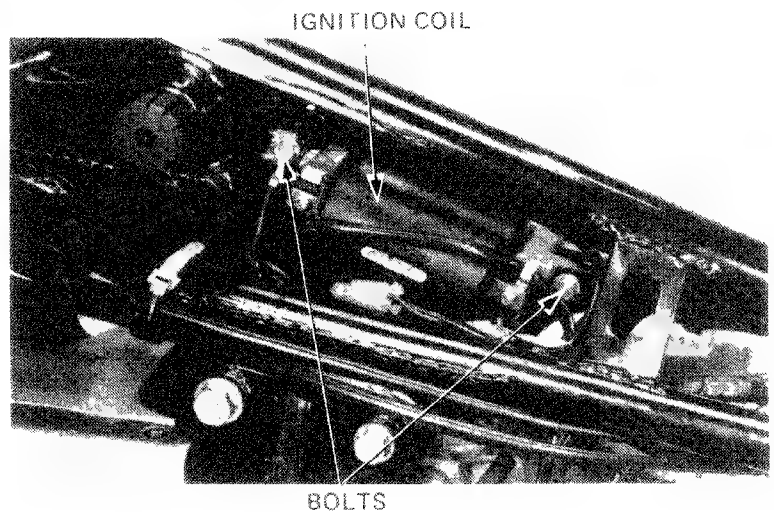
### IGNITION COIL

#### REMOVAL

Remove the fuel tank.

Disconnect the ignition switch couplers.

Remove the coil by removing the attaching bolts.



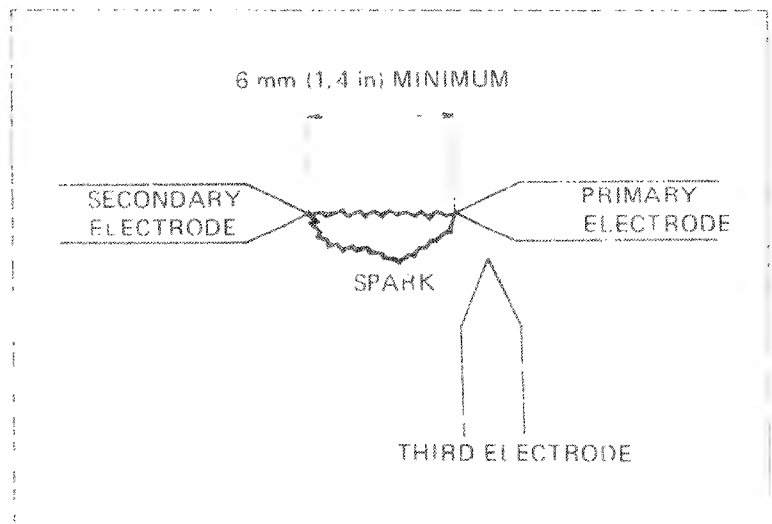
#### PERFORMANCE TEST

Perform the 3 point spark test with a coil tester.

**SERVICE LIMIT** 6 mm (1/4 in) min

#### NOTE

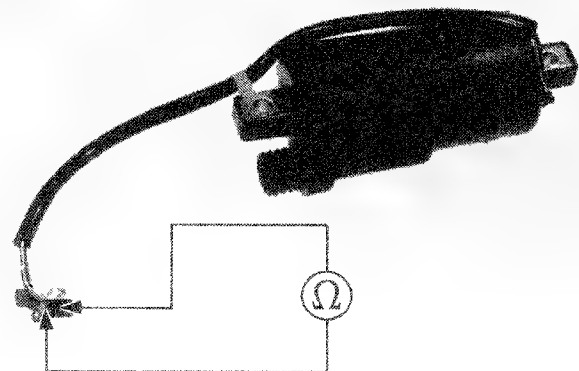
Follow the coil tester manufacturer's instructions.



#### PRIMARY COIL INSPECTION

Check the resistance between the leads with an ohmmeter as shown.

**RESISTANCE** 2-3Ω





## SECONDARY COIL INSPECTION

### NOTE

The secondary coil inspection method differs depending on whether or not there is a mark on the ignition coil body. Look for an "S" mark before testing.

### WITH "S" MARK

Measure the resistance between the black/white coupler terminal and the high tension coil terminal.

### NOTE

- Use SANWA TESTER (07308-0020000) or KOWA TESTER (TH-5H).
- Use new test batteries for this test.

1. Connect the negative probe of the tester to the coupler terminal and positive probe to the high tension terminal and measure the resistance.

### RESISTANCE:

SANWA TESTER: 200–350 k $\Omega$

KOWA TESTER: 50–200 k $\Omega$

2. Change the tester polarities and measure the resistance.

RESISTANCE:  $\infty$  ohms

Replace the ignition coil if the resistance of test 1 and/or 2 exceeds the limit.

### WITHOUT "S" MARK

Connect the ignition coil tester and two 12V batteries as shown in the figure.

### NOTE

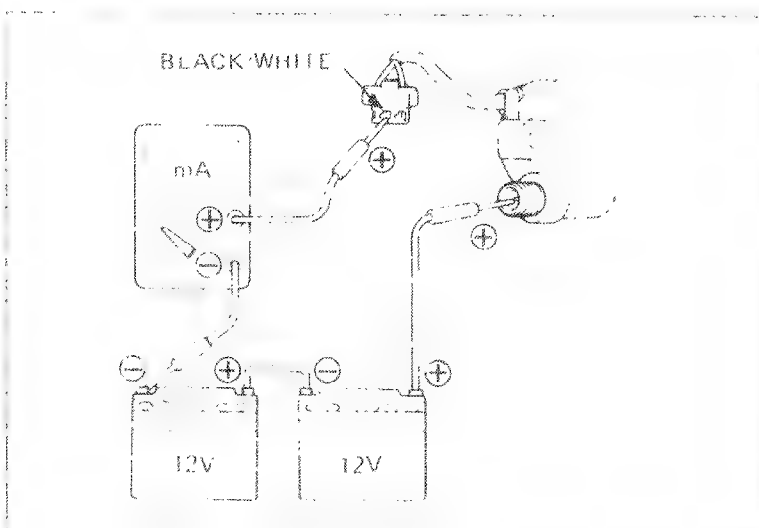
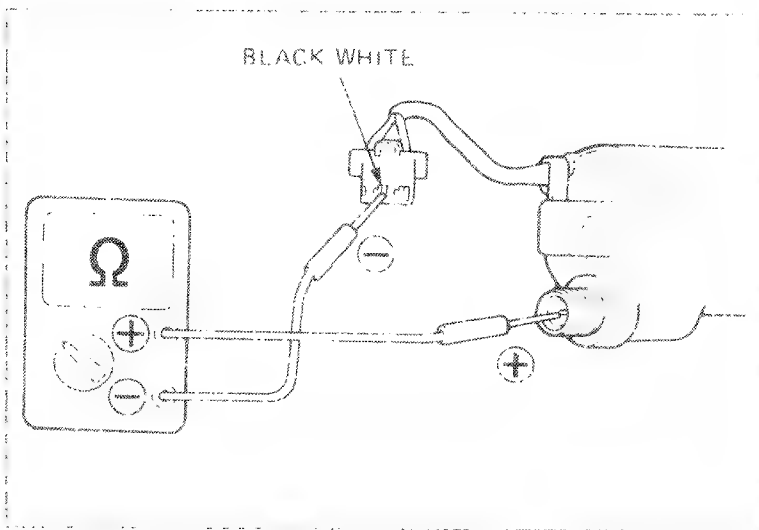
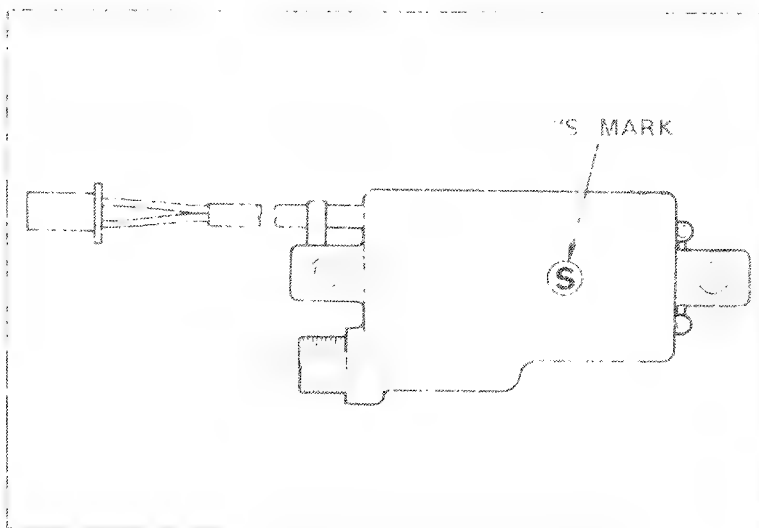
Make sure the battery voltage is 23–25V before measuring.

Replace the ignition coil if the reading does not meet the specification.

| Tester | Measuring range | Specification                 |
|--------|-----------------|-------------------------------|
| SANWA  | 25 mA           | Approximately 3 mA            |
| KOWA   | 100 mA          | Needle should swing slightly. |

Change the tester polarities.

Replace the ignition coil if there is continuity.

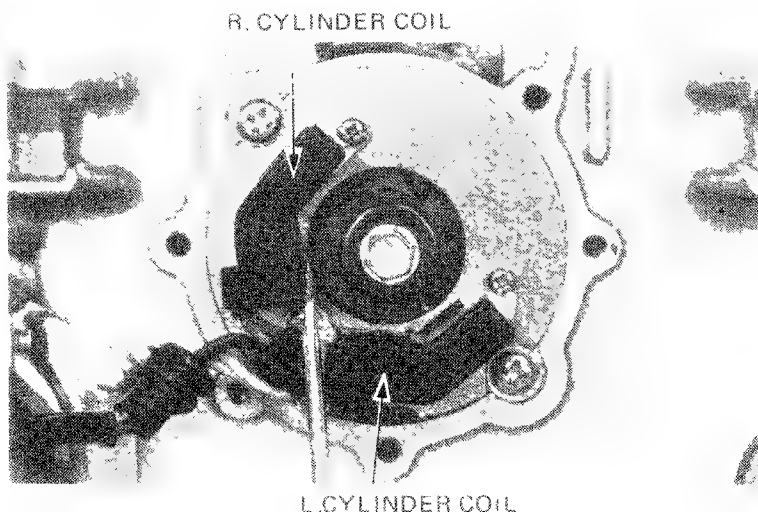




## TRANSISTORIZED IGNITION SYSTEM

### INSPECTION

Remove the swingarm (Page 14-16).  
 Remove the pulse generator cover.  
 Disconnect the spark plugs.  
 Hold each plug against any convenient engine ground.  
 Turn the ignition switch on.  
 Touch the end of a screwdriver to one pulse generator steel core.  
 A good spark to the plug means that the ignition system for that cylinder is in good shape.  
 Repeat the above for the other pulse generator.

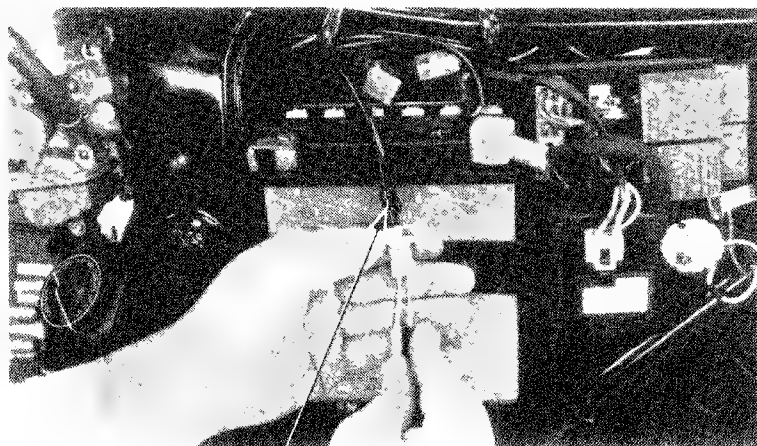


Measure the coil resistance.

**COIL RESISTANCE:**  $530 \pm 50\Omega$  (20° C, 68° F)

Between yellow with white tube and yellow leads (Right cylinder)

Between blue with white tube and blue leads (Left cylinder)

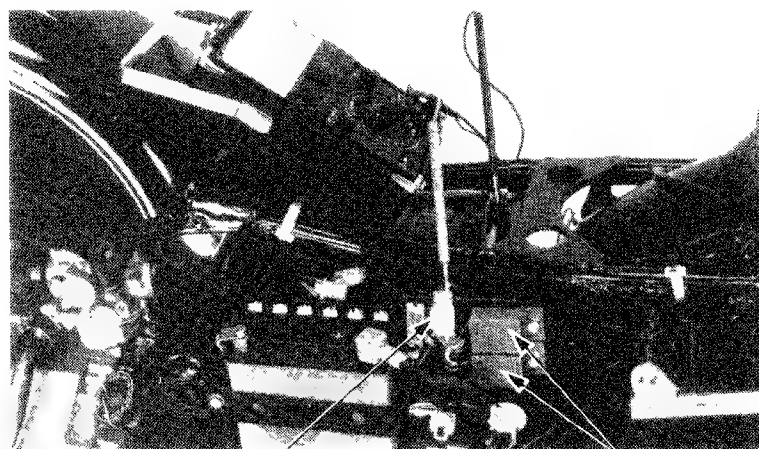


PULSE GENERATOR WIRE

### SPARK UNIT

Disconnect the wires at the pulse generator coupler.

Attach the positive lead of a voltmeter to the blue with yellow tube wire terminal (L) or yellow with white tube wire terminal (R) of the 6 pole coupler.  
 Attach the negative lead to any convenient ground.  
 Turn the ignition switch on.



6 POLE COUPLER

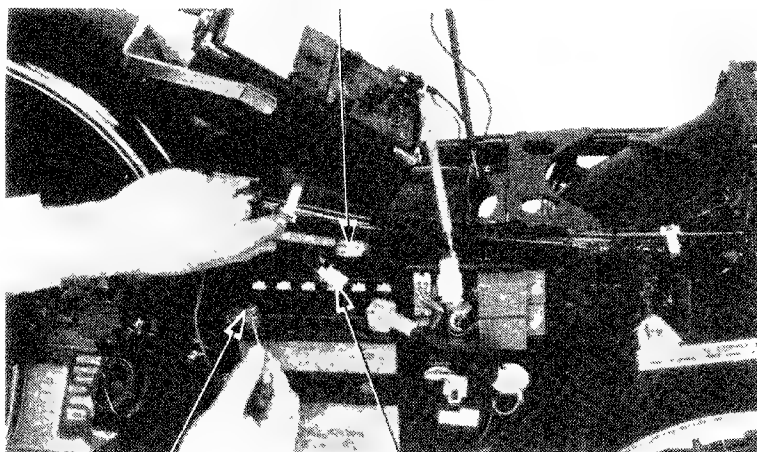
SPARK UNITS



Ground each corresponding terminal (L: blue with white tube wire terminal, R: yellow with white tube wire terminal) of the 4 pole coupler intermittently.

The transistor unit is normal if the voltage indicated by the voltmeter changes from 12V to 0V in each test.

PULSE GENERATOR COUPLER  
(WIRE HARNESS SIDE)



BATTERY  
GROUND

PULSE GENERATOR  
COUPLER

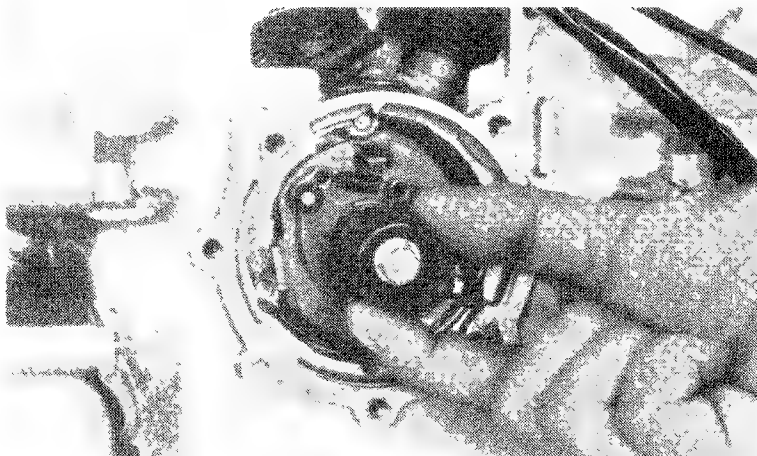
## SPARK ADVANCER

Remove the pulse generator (Page 8-3).

Check the mechanical advancer cam for sticking. Lubricate the sliding surfaces, and check the spring for loss of tension and advancer pin for excessive wear.

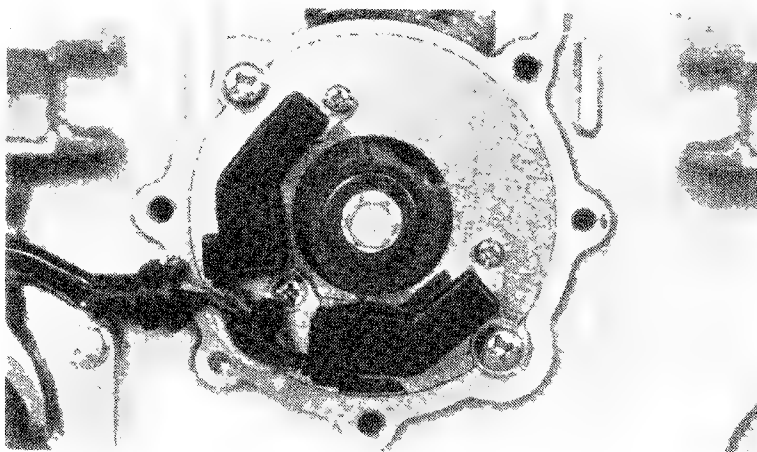
### NOTE

Align the rotor tooth with the cut-out of the advancer when assembling.



Reinstall the spark advancer.

Reinstall the pulse generator and adjust the ignition timing (Page 8-10).







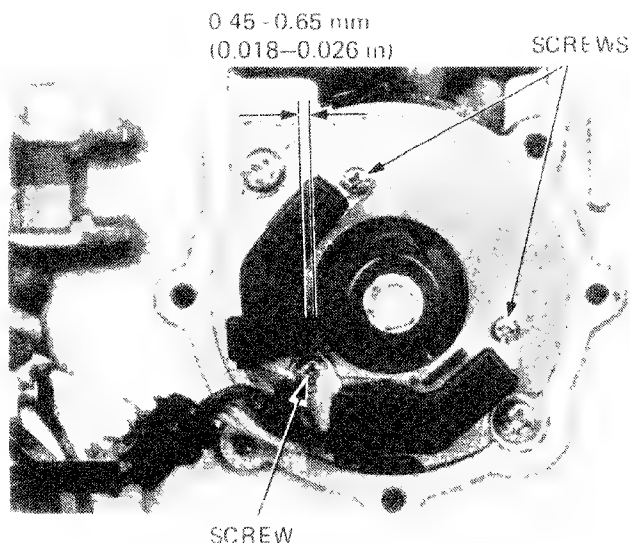
## IGNITION SYSTEM

### PULSE GENERATOR AIR GAP ADJUSTMENT

Measure the air gaps between the pulse generators and the rotor tooth.

AIR GAP 0.45–0.65 mm (0.018–0.026 in)

If an adjustment is necessary, loosen the pulse generator coil attaching screws and move the coil to achieve the correct gap.  
Recheck the ignition timing.



### IGNITION TIMING CHECK

Remove the timing hole cap and install the timing inspection plug.

Connect a timing light to the right cylinder.

Connect a tachometer.

Start the engine and check the ignition timing:

At 1,000 ± 100 rpm.

The index mark should be aligned with the FI mark.

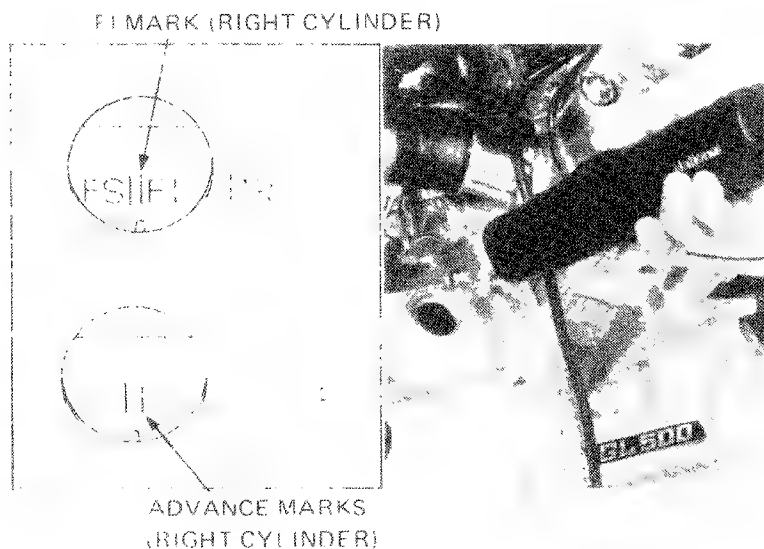
At 1,500 ± 100 rpm.

Timing advance should start.

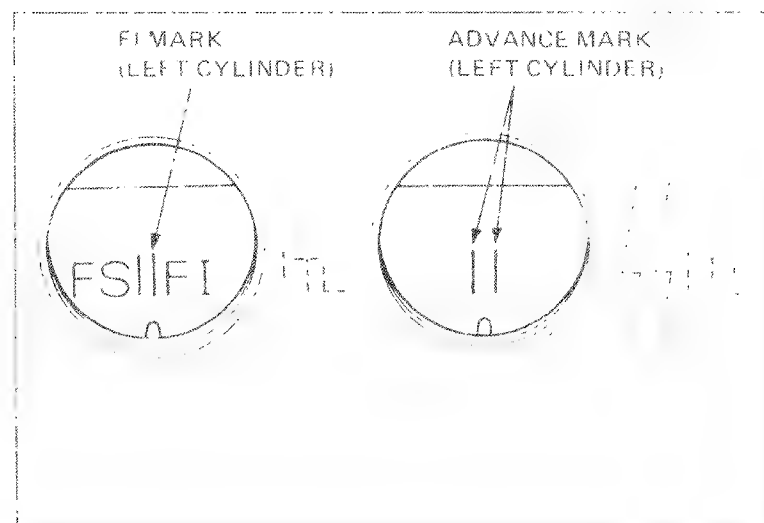
At 2,000 ± 150 rpm.

Timing advance should cease.

The index mark should be between the full advance marks.



Check the left cylinder using the FI mark and the full advance marks.

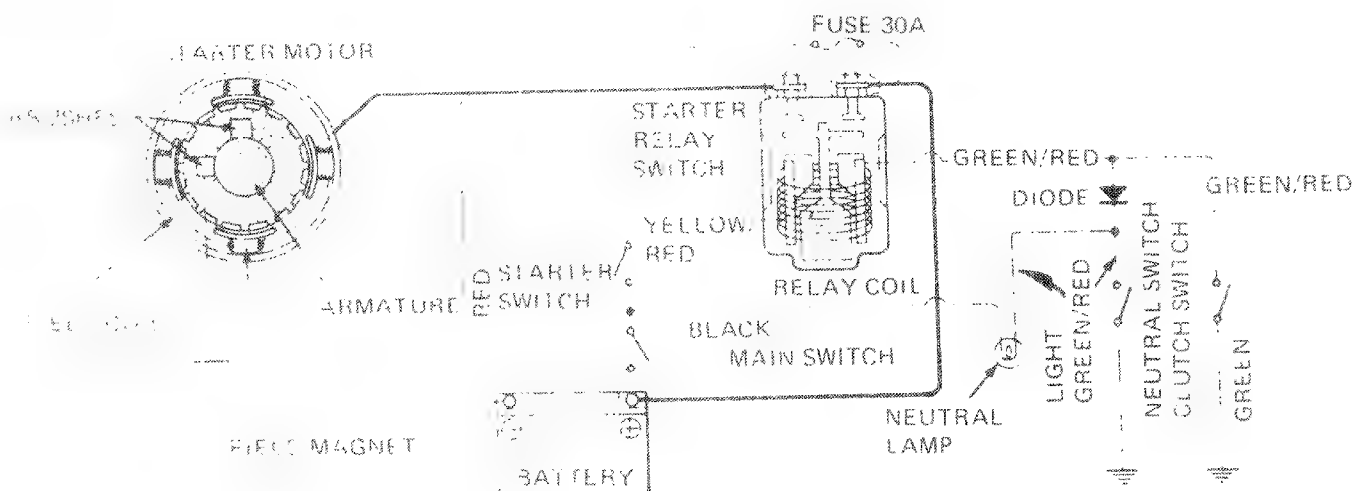
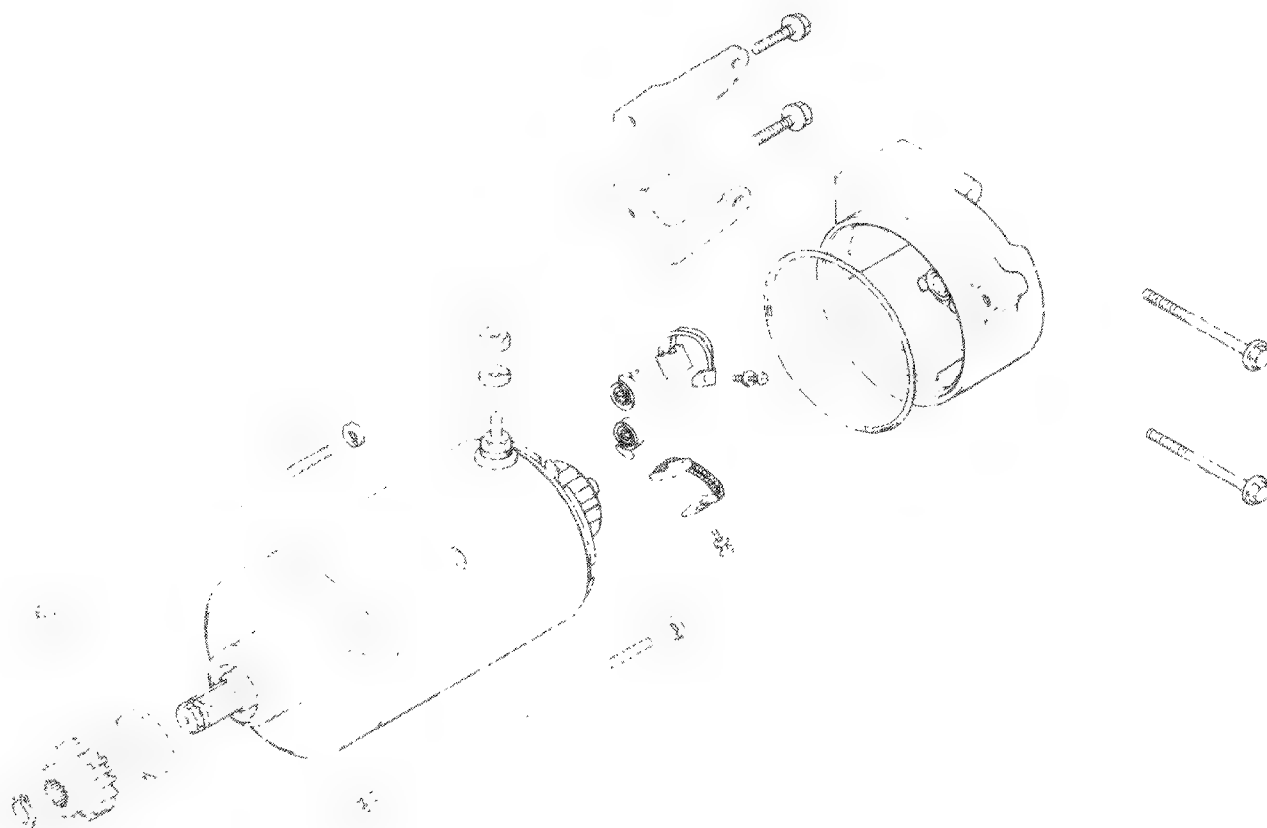




**HONDA**  
GL500  
GL500 INTERSTATE

---

MEMO





# 18. STARTER SYSTEM

|                     |      |
|---------------------|------|
| SERVICE INFORMATION | 18-1 |
| TROUBLESHOOTING     | 18-1 |
| STARTER MOTOR       | 18-2 |
| RELAY SWITCH        | 18-4 |
| SILICONE RECTIFIER  | 18-4 |

## SERVICE INFORMATION

### GENERAL INSTRUCTION

The starter motor can be removed with the engine in the frame. Starter clutch repairs (Page 8-5)

### SPECIFICATIONS

| Item                 | Standard                        | Service Limit     |
|----------------------|---------------------------------|-------------------|
| Starter motor        |                                 |                   |
| Brush spring tension | 0.495-0.605 kg                  | 400 g             |
| Brush length         | 11.0-12.5 mm<br>(0.43-0.49 in.) | 5.5 mm (0.21 in.) |

## TROUBLESHOOTING

### Starter Motor Will Not Turn:

1. Dead battery
2. Faulty ignition switch
3. Faulty starter switch
4. Faulty neutral switch
5. Faulty starter relay switch
6. Loose or disconnected wire or cable
7. Faulty main cable
8. Faulty main switch

### Starter Motor Turns Engine Slowly:

1. Low battery
2. Loose or disconnected wire or cable
3. Faulty starter motor

### Starter Motor Turns, But Engine Does Not Turn:

1. Faulty starter clutch
2. Faulty starter motor gears
3. Faulty starter motor or idle gear

### Starter Motor and Engine Turn, But Engine Does Not Start:

1. Faulty ignition system
2. Engine problems
3. Faulty engine stop switch



## STARTER SYSTEM

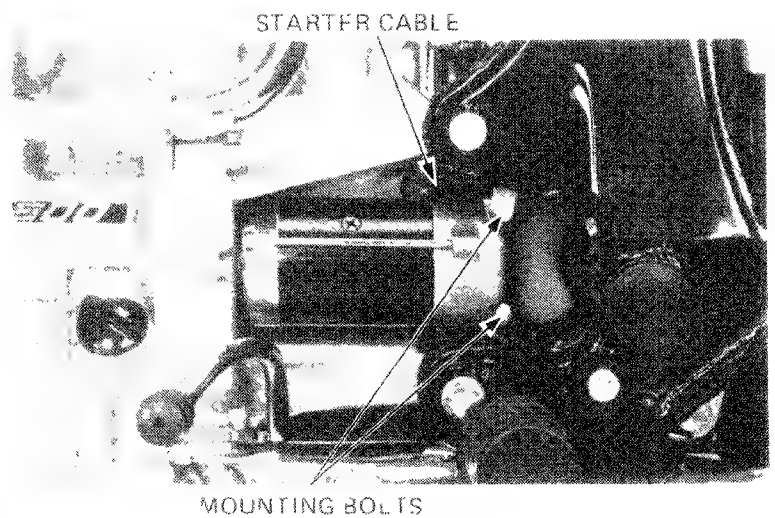
### STARTER MOTOR

#### REMOVAL

##### **WARNING**

With the ignition switch OFF, remove the negative cable at the battery before servicing the starter motor.

- 1 Remove the starter mounting bolts and pull the motor out of the engine case.
- 2 Disconnect the starter cable.

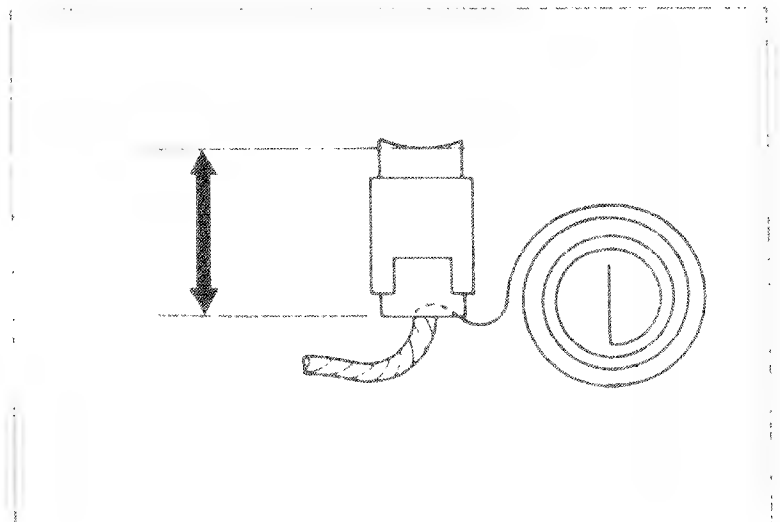


#### BRUSH INSPECTION

- 1 Remove the starter motor case screws. Inspect the brushes and measure brush length. Measure brush spring tension with a spring scale.

##### SERVICE LIMITS:

- Brush length: 5.5 mm (0.21 in)
- Brush spring tension: 400 g



#### COMMUTATOR INSPECTION

- 1 Remove the case.

##### NOTE

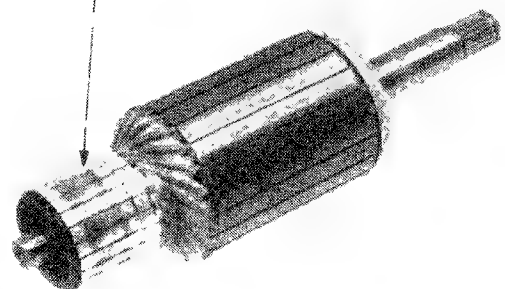
Record the location and number of the thrust washers.

- 2 Inspect the commutator bars for discoloration. Bars discolored in pairs indicate grounded armature coil.

##### NOTE

Do not use emery or sand paper on the commutator.

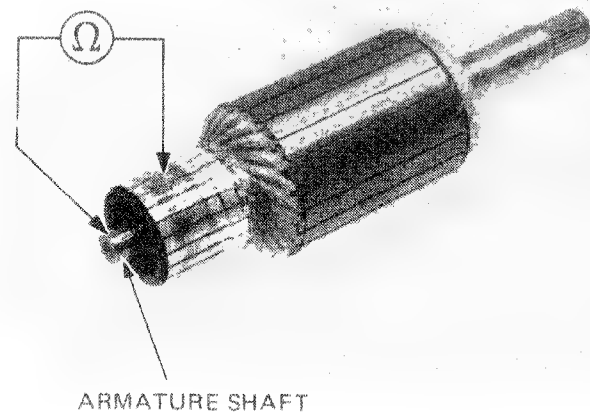
#### COMMUTATOR





Check for continuity between pairs of commutator bars and also between commutator bars and armature shaft.

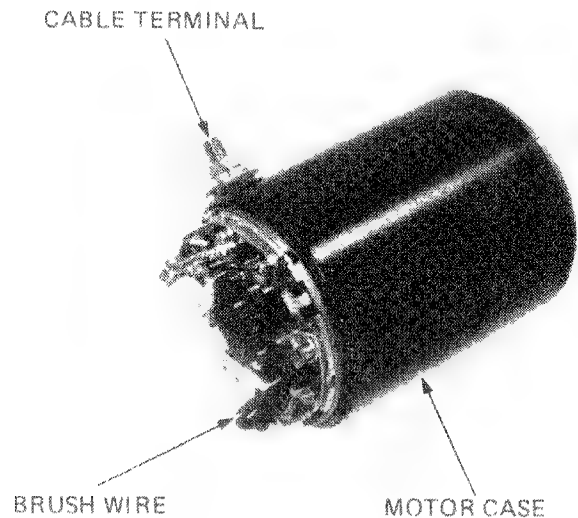
Replace starter motor if armature coils are open, or shorted to armature shaft.



### FIELD COIL INSPECTION

Check for continuity from the cable terminal to the motor case and from the cable terminal to the brush wire.

Replace the starter motor if the field coil is not continuous or if it is shorted to the motor case.



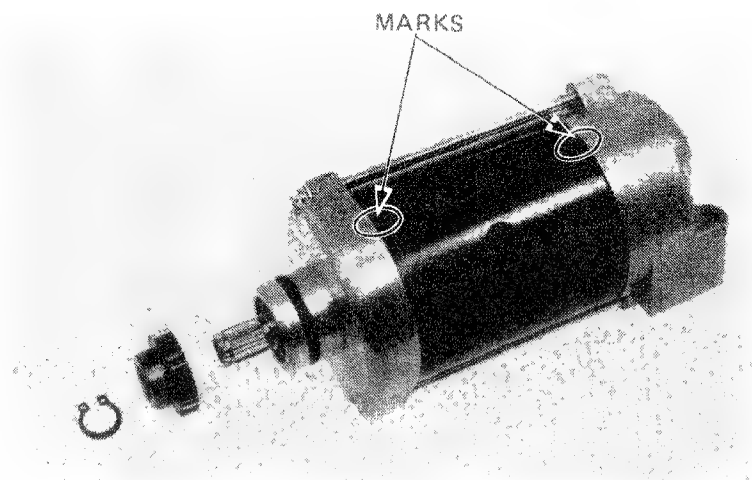
### ASSEMBLY INSTALLATION

Assemble the starter motor.

#### NOTE

Align the punch mark on the case to the punch mark on the cover.

Connect the starter motor cable and install the starter motor on the engine.





## STARTER SYSTEM

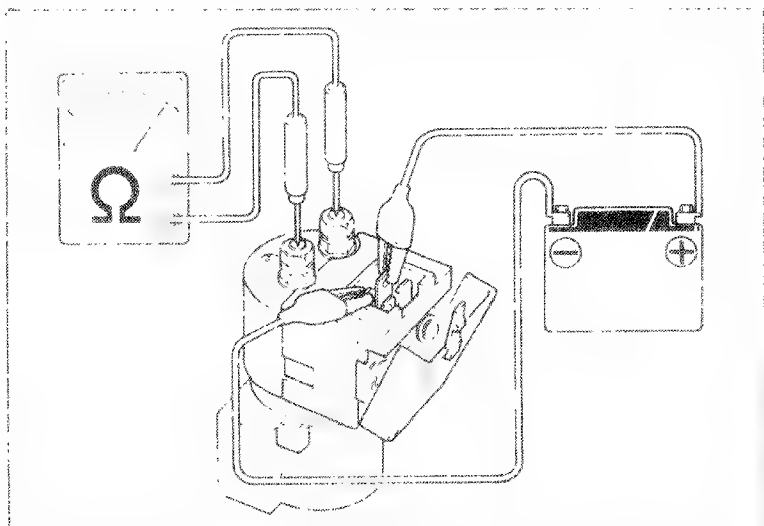
### RELAY SWITCH

#### INSPECTION

To test if the switch primary coil is normal, depress the switch button. The coil is normal if the switch clicks into position.

Connect an ohmmeter and 12V battery to the starter relay switch as shown.

The switch is normal if there is continuity.



### SILICONE RECTIFIER

#### INSPECTION

Remove the left side cover and remove the silicone rectifier from the wire harness. Check for continuity with an ohmmeter.

**NORMAL DIRECTION: CONTINUITY**

⊕ probe: Light green/Red (+)

⊖ probe: Green/Red (-)

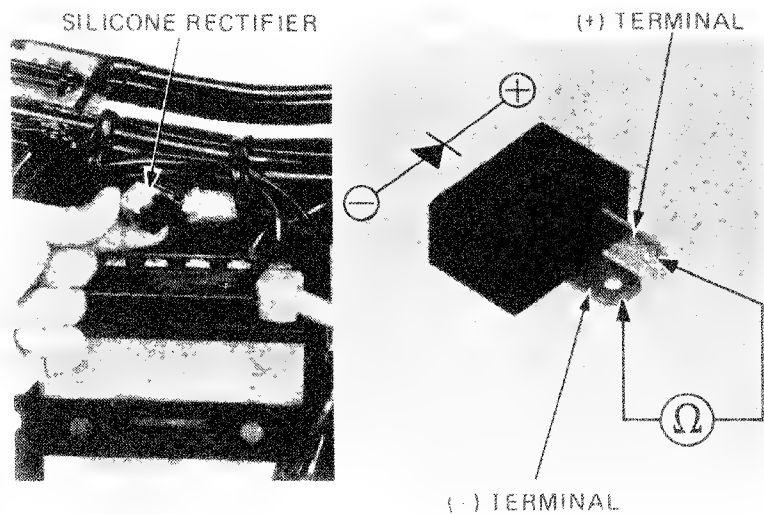
**REVERSE DIRECTION: NO CONTINUITY**

⊕ probe: Green/Red (-)

⊖ probe: Light green/Red (+)

#### NOTE

The test chart is for a positive ground ohmmeter. The test results will be reversed if a negative ground ohmmeter is used.







# 19. LIGHTS/SWITCHES

|                             |      |                                           |      |
|-----------------------------|------|-------------------------------------------|------|
| SERVICE INFORMATION         | 19-1 | CLUTCH SWITCH                             | 19-4 |
| OIL PRESSURE WARNING SWITCH | 19-2 | IGNITION SWITCH                           | 19-5 |
| BRAKE SWITCHES              | 19-2 | TEMPERATURE GAUGE                         | 19-7 |
| NEUTRAL SWITCH              | 19-2 | AUXILIARY VOLTAGE<br>REGULATOR INSPECTION | 19-7 |
| HANDLEBAR SWITCHES          | 19-3 | BULB REPLACEMENT                          | 19-8 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- Some wires have different colored bands around them near the connector. These are connected to other wires which correspond with the band color.
- All plastic plugs have locking tabs that must be released before disconnecting, and must be aligned when reconnecting.
- The following color codes used are indicated throughout this section and on the wiring diagram.

|            |                 |                  |            |
|------------|-----------------|------------------|------------|
| Bu = Blue  | G = Green       | Lg = Light Green | R = Red    |
| Bl = Black | Gr = Grey       | O = Orange       | W = White  |
| Br = Brown | Lb = Light Blue | P = Pink         | Y = Yellow |

- To isolate an electrical failure, check the continuity of the electrical path through the part. A continuity check can usually be made without removing the part from the motorcycle. Simply disconnect the wires and connect a continuity tester or volt ohmmeter to the terminals or connections.
- A continuity tester is useful when checking to find out whether or not there is an electrical connection between the two points. An ohmmeter is needed to measure the resistance of a circuit, as when there is a specific coil resistance involved, or when checking for high resistance by corroded connections.

1



## LIGHTS, SWITCHES

### OIL PRESSURE WARNING SWITCH

Check for continuity while applying pressure to the switch.

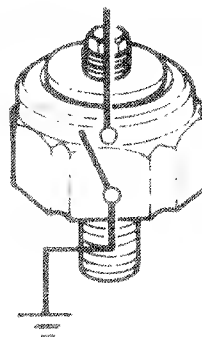
Pressure: 20 kPa (0.2 kg/cm<sup>2</sup>, 2.9 in. Hg)

Pressure: 20-40 kPa

0.2-0.4 kg/cm<sup>2</sup>, 2.9-5.6 psi

Refer to the section if necessary.

Check for continuity to the switch threads.



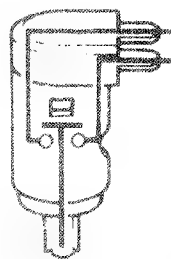
### BRAKE SWITCHES

Check the front brakelight switch for continuity when the brake is applied.

Check the front brakelight switch for continuity when the brake is not applied.

Refer to the section if necessary.

FRONT



BRAKE APPLIED

BRAKE NOT APPLIED

REAR



CONTINUITY

NO CONTINUITY

### NEUTRAL SWITCH

NOTE:

Refer to page 8-4 for neutral switch removal.

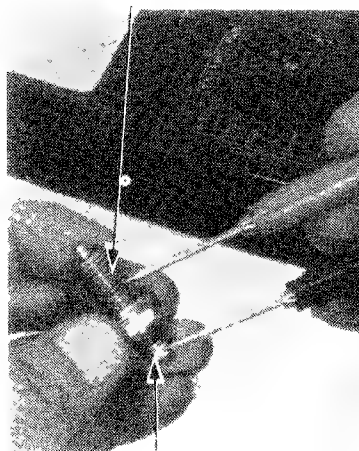
Check the neutral switch for continuity between the top and bottom terminals. The switch is normal if there is continuity.

Check for shorts between the top terminal and body or ground. Replace the switch if there is continuity.

Inspect the neutral switch wire.

BODY

BOTTOM TERMINAL

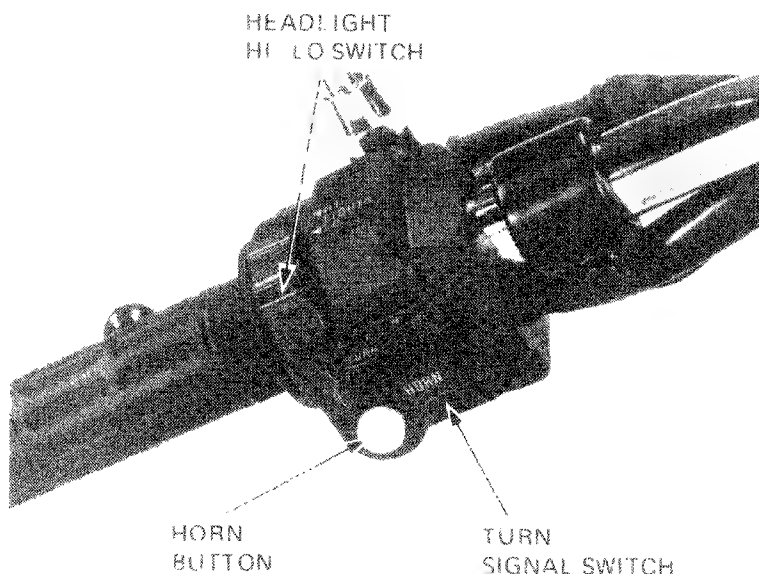


PLUNGER



## HANDLEBAR SWITCHES

The handlebar master switches (lights, turn signals, horn) must be replaced as assemblies.  
Continuity tests for the components of the handlebar master switches follow.  
Continuity should exist between the color coded wires of each part.



### HEADLIGHT HI-LOW SWITCH

Hi: L/W or L  
MIDDLE (N): L/W to W to L  
Lo: L/W to W

Headlight Hi-Low Switch

|            | Hi  | Mi  | Lo  |
|------------|-----|-----|-----|
| Hi         | On  | Off | Off |
| (N)        | On  | On  | Off |
| Lo         | Off | Off | On  |
| Code color | L/W | L   | W   |

### TURN SIGNAL SWITCH

LEFT: Gr to O, Br/W to Lb/W  
OFF: No continuity  
RIGHT: Gr to Lb, Br/W to O/W

Turn Signal Switch

|            | W   | L   | R   | FL   | PR   | PL  |
|------------|-----|-----|-----|------|------|-----|
| LEFT       | On  | On  | Off | On   | On   | On  |
| OFF        | Off | Off | Off | Off  | Off  | Off |
| RIGHT      | Off | Off | On  | Off  | Off  | Off |
| Code color | Gr  | C   | Lb  | Br/W | Lb/W | O/W |

### HORN BUTTON

Light G with button depressed  
No continuity with button released

Horn Button

|               | Ho  | E   |
|---------------|-----|-----|
| Light G       | On  | Off |
| No continuity | Off | Off |
| Code color    | Lg  | G   |



## LIGHTS, SWITCHES

### STARTER BUTTON

B to Y/R with button depressed

#### Starter Button

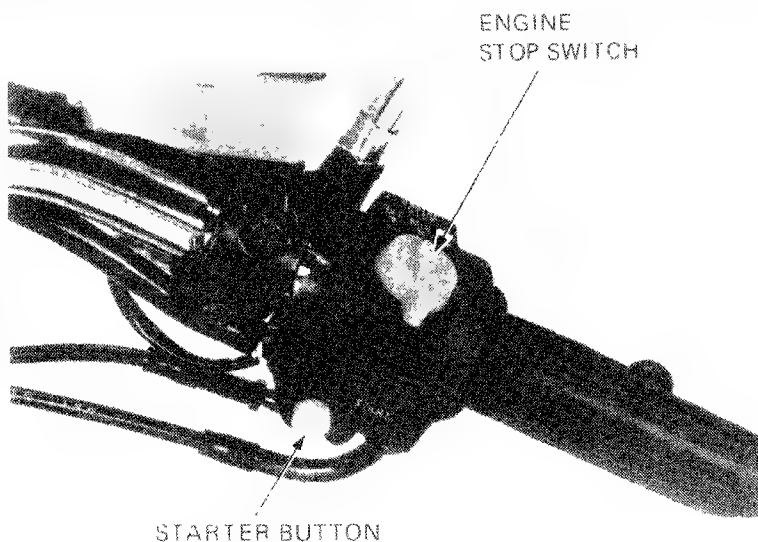
|              |                  |     |                  |     |
|--------------|------------------|-----|------------------|-----|
|              | BAT <sub>1</sub> | ST  | BAT <sub>2</sub> | HL  |
| FREE         |                  |     |                  |     |
| START        |                  |     |                  |     |
| Wiring Color | B                | Y/R | B/R              | L/W |

### ENGINE STOP SWITCH

RUN. B to B/W  
OFF No continuity

#### Engine Stop Switch

|              |                  |                 |
|--------------|------------------|-----------------|
|              | BAT <sub>1</sub> | IG <sub>1</sub> |
| OFF          |                  |                 |
| RUN          |                  |                 |
| OFF          |                  |                 |
| Wiring Color | B                | B/W             |



### CLUTCH SWITCH

Check continuity of the clutch lever (safety) switch with the clutch released and applied.

Replace if necessary.

CLUTCH APPLIED: CONTINUITY

CLUTCH RELEASES: NO CONTINUITY

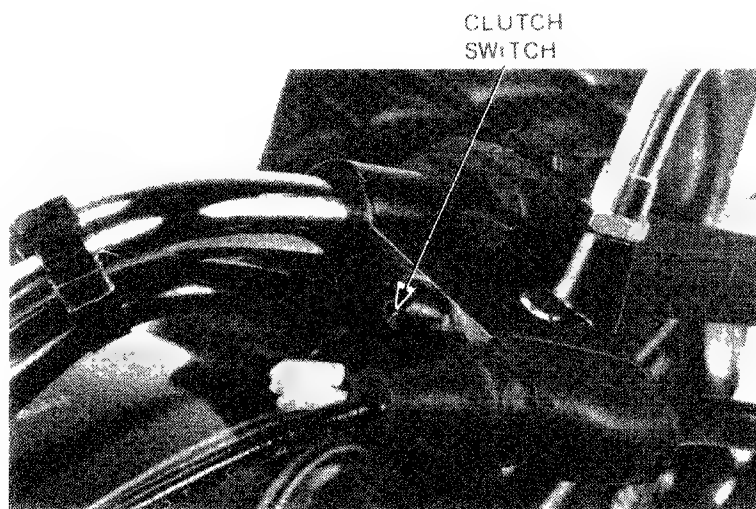
#### REMOVAL

Unplug the wires and remove the clutch lever and cable.

Remove the switch.

#### NOTE

The switch case has a small protrusion that must point toward the handlebar when installed.



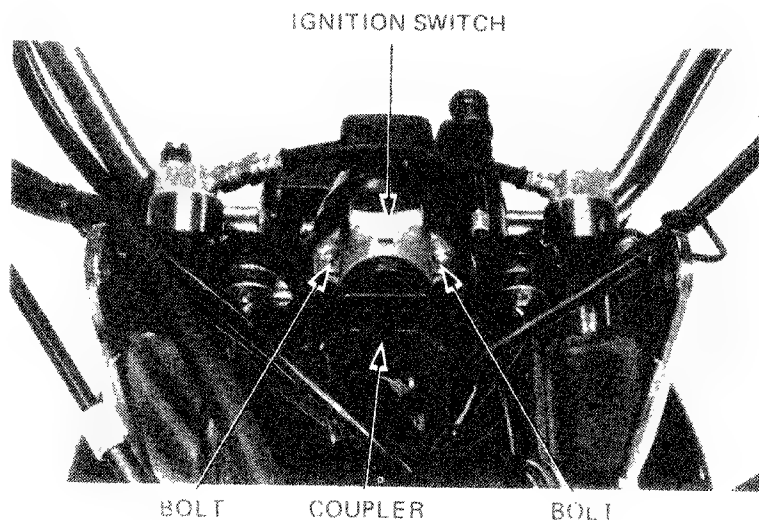


## IGNITION SWITCH

Remove the headlight case and instrument cluster, disconnect the coupler and remove the ignition switch.

### NOTE

Identify the wire colors at the connector. There are no colors on the switch.

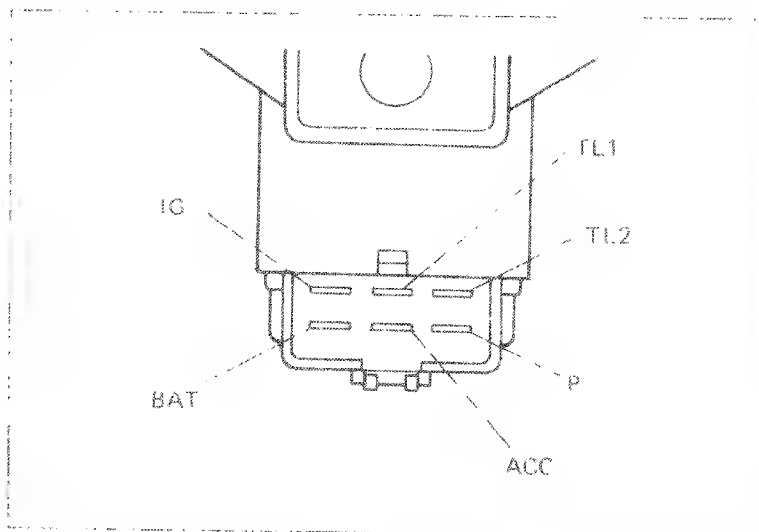


Check continuity of terminals on the ignition switch in each switch position.

### SWITCH POSITION

|      |                                           |
|------|-------------------------------------------|
| LOCK | No continuity                             |
| OFF  | No continuity                             |
| ACC  | BAT <sub>1</sub> to ACC                   |
| ON   | BAT <sub>1</sub> to IG <sub>1</sub> , ACC |
|      | TL <sub>1</sub> to TL <sub>2</sub>        |
| P    | BAT <sub>1</sub> to ACC, P                |

|      | BAT <sub>1</sub> | IG <sub>1</sub> | ACC | TL <sub>1</sub> | TL <sub>2</sub> | P |
|------|------------------|-----------------|-----|-----------------|-----------------|---|
| LOCK |                  |                 |     |                 |                 |   |
| OFF  |                  |                 |     |                 |                 |   |
| ACC  |                  |                 |     |                 |                 |   |
| ON   |                  |                 |     |                 |                 |   |
| P    |                  |                 |     |                 |                 |   |

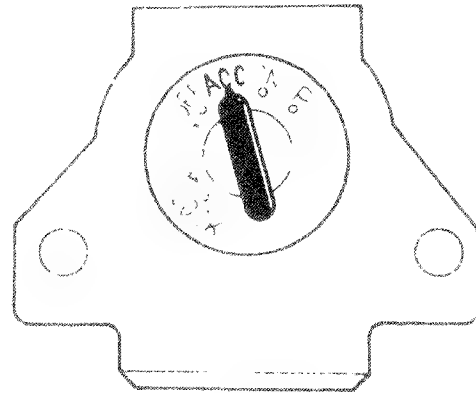




## LIGHTS/SWITCHES

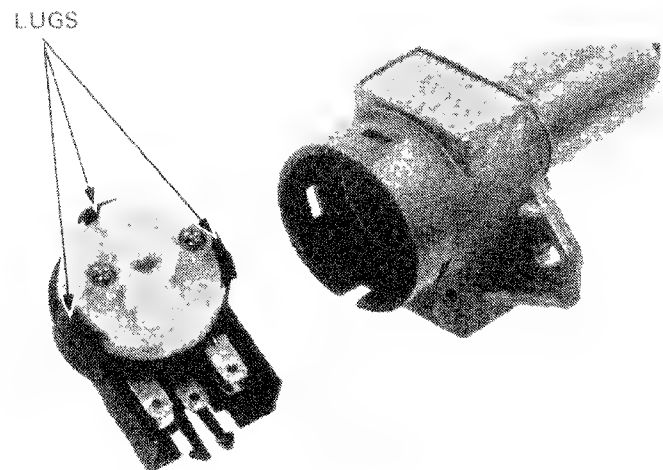
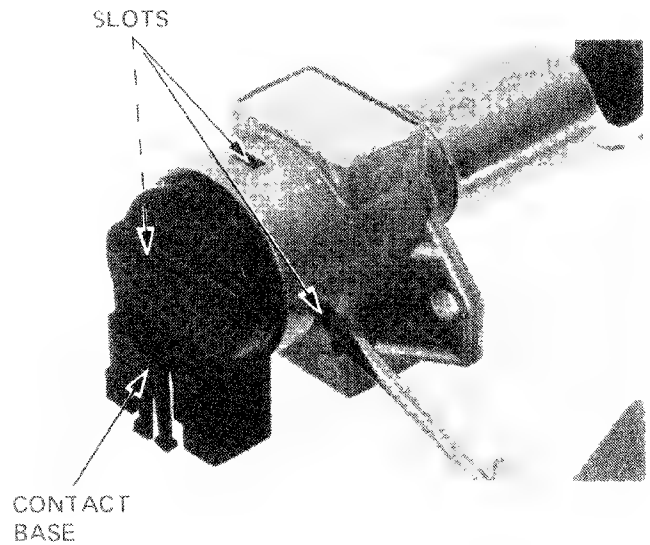
### IGNITION SWITCH DISASSEMBLY

Insert the key and position it in the middle of the ACC position.



Remove the lugs from the slots and remove the contact base.

Assembly is the reverse of removal.



## TEMPERATURE GAUGE

Connect a tested sensor and auxiliary voltage regulator as shown to the gauge to be tested.

### CAUTION

*The temperature gauge operates on 7 volts. Do not apply 12 volts directly to the gauge.*

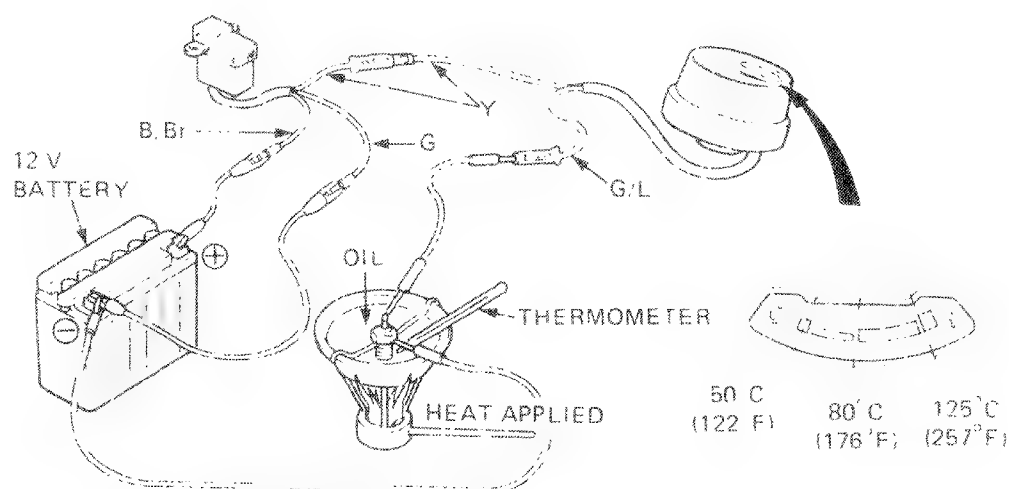
Suspend the sensor in a pan of oil.

Do not let the sensor or thermometer touch the pan or false readings will result.

Compare the gauge readings to the thermometer readings as the oil heats.

### NOTE

Refer to page 9-4, for temperature unit inspection.

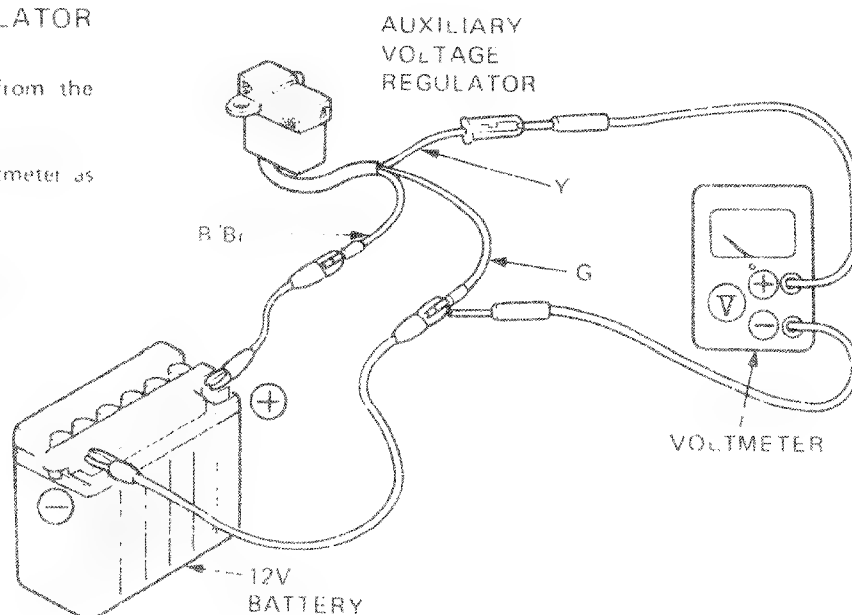


## AUXILIARY VOLTAGE REGULATOR INSPECTION

Remove the auxiliary voltage regulator from the rear of the speedometer.

Test the regulator with a battery and voltmeter as shown.

Regulator output voltage should be 7 volts.







## LIGHTS SWITCHES

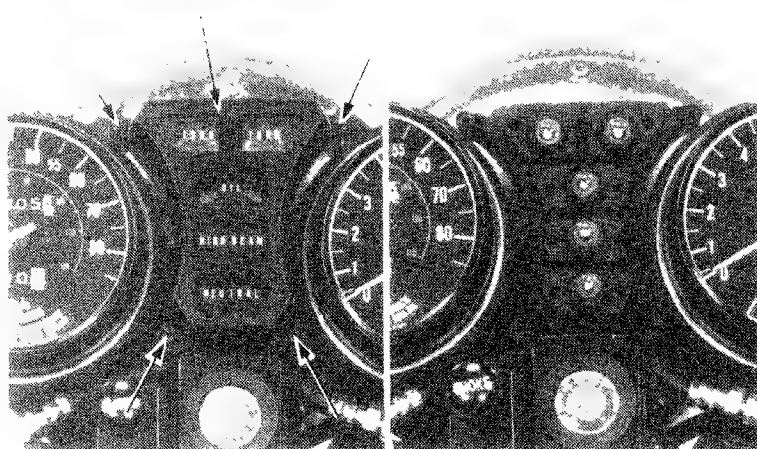
### BULB REPLACEMENT

#### INDICATOR BULB

Remove the indicator light panel screws and panel to replace the bulb.

If a new indicator bulb does not light, check for correct wiring and a short or open circuit.

INDICATOR LIGHT PANEL



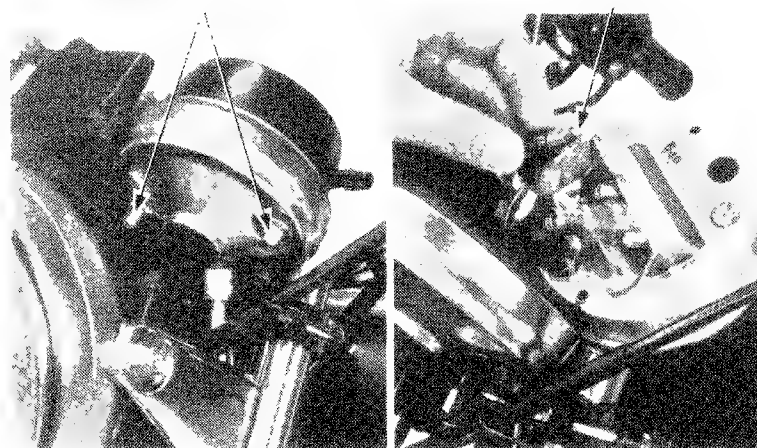
#### METER ILLUMINATION BULB

Remove the meter plate.

Remove the meter mounting nut and meter from the meter socket and replace the bulb.

MOUNTING NUTS

BULB



#### TURN SIGNAL BULB

Remove the turn signal lens to get over the bulb.

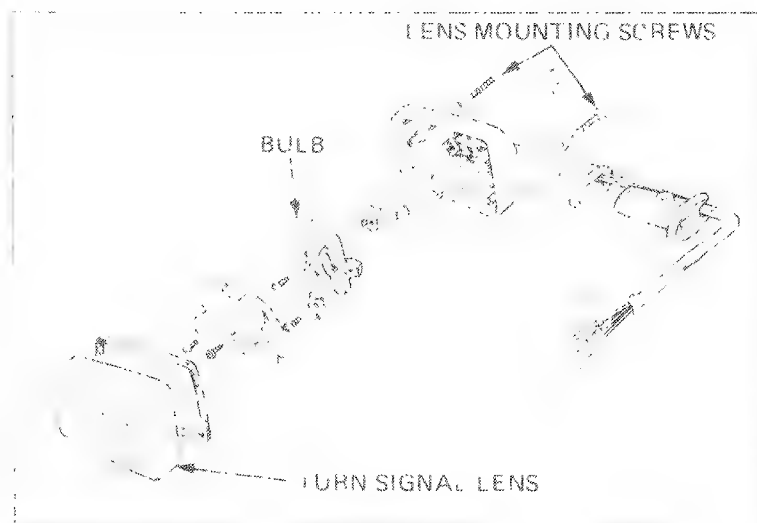
#### CAUTION

Do not scratch the lens mounting screws or the lens while changing the bulb.

LENS MOUNTING SCREWS

BULB

TURN SIGNAL LENS

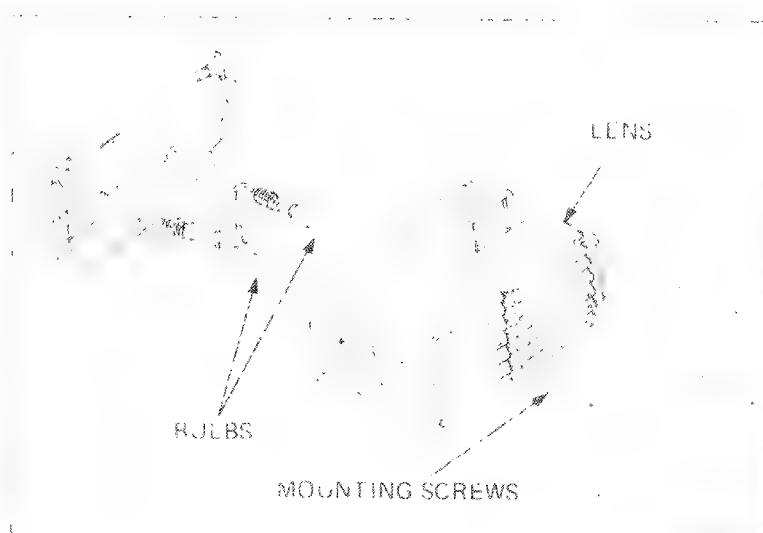


### TAIL LIGHT

Remove the tail lamp part of the tail light assembly and then remove the part.

#### CAUTION

Do not touch the bulb when installing the halogen bulb. It will break the bulb.



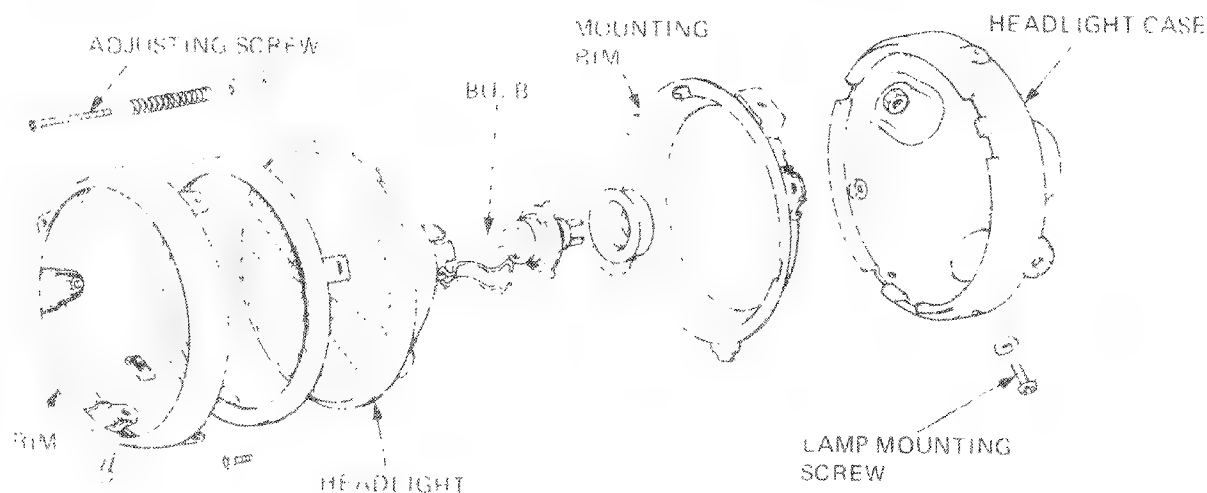
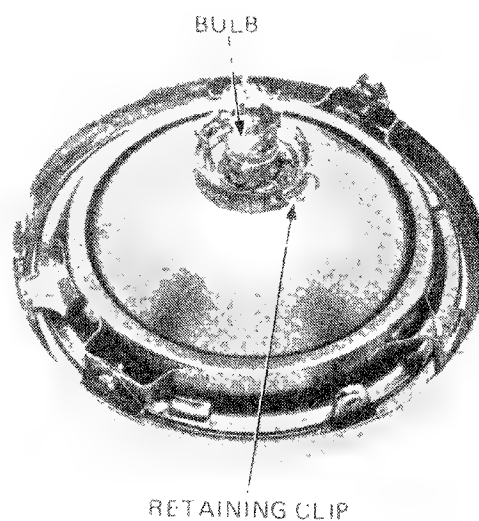
### HEADLIGHT

Remove the mounting screws from the headlight assembly and remove the lamp assembly from the headlight case to remove the socket from the bulb.

Remove the bulb, retaining clip, and remove the bulb. Then install the bulb in the reverse order of assembly.

#### CAUTION

Do not touch the bulb when installing the halogen bulb. It will break the bulb. It will break the bulb when it is touched with a bare hand. It will break the bulb when it is touched with a bare hand.





**HONDA**  
GL500  
GL500 INTERSTATE

---

## MEMO



**HONDA**  
GL500  
GL500 INTERSTATE

# 20. INTERSTATE ACCESSORIES

|                     |      |
|---------------------|------|
| SERVICE INFORMATION | 20-1 |
| HEADLIGHT           | 20-2 |
| TURN SIGNAL         | 20-2 |
| FAIRING AND BRACKET | 20-3 |
| ADJUSTMENT          | 20-5 |

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- INTERSTATE Cable and harness routing Refer to page 1-6
- INTERSTATE Wiring diagram Refer to page 1-8

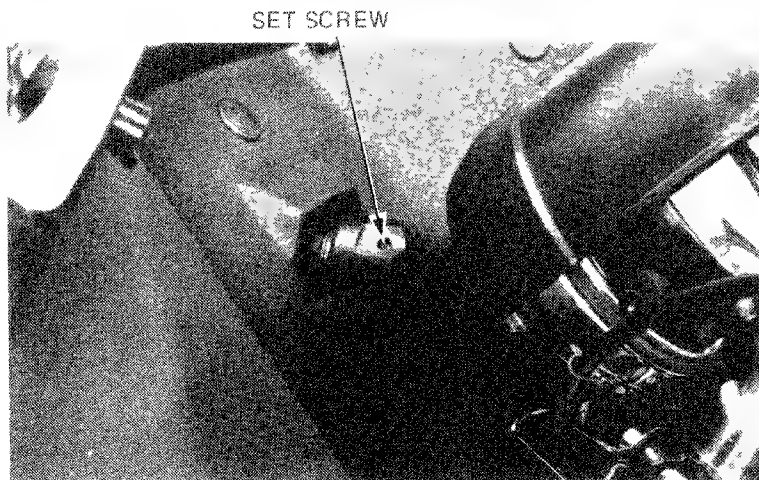
2



## HEADLIGHT

### REMOVAL

Loosen the headlight adjusting knob set screw and remove the knob.

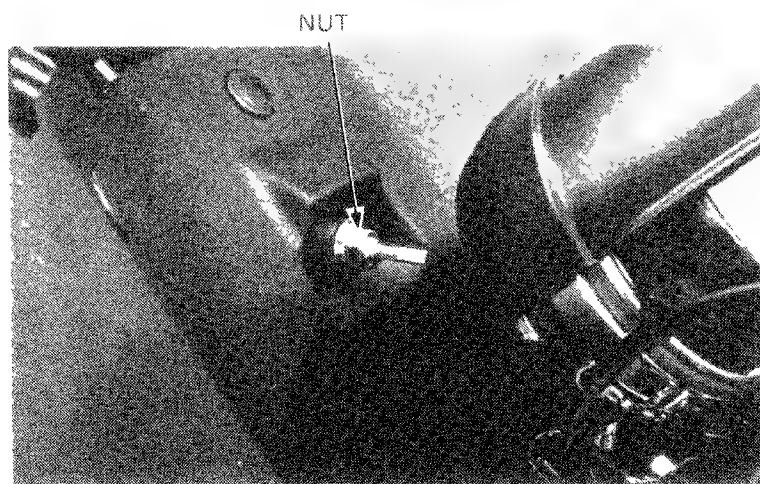


Remove the nut, lockwasher and flat washer and pull off the headlight.

Install in reverse order of removal.

#### CAUTION

*Wear clean gloves when installing the halogen bulb. Do not touch the bulb with your bare hands. Wipe it with a cloth moistened with isopropyl alcohol to prevent its early failure.*

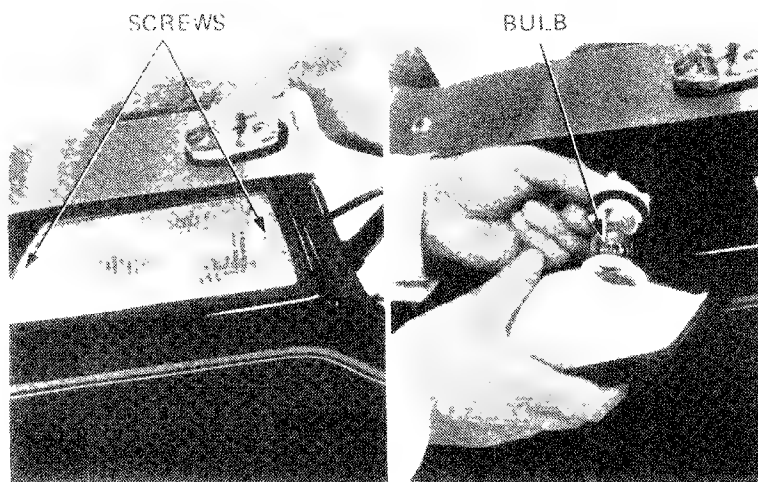


## TURN SIGNAL

Remove the turn signal lens to remove the bulb.

#### CAUTION

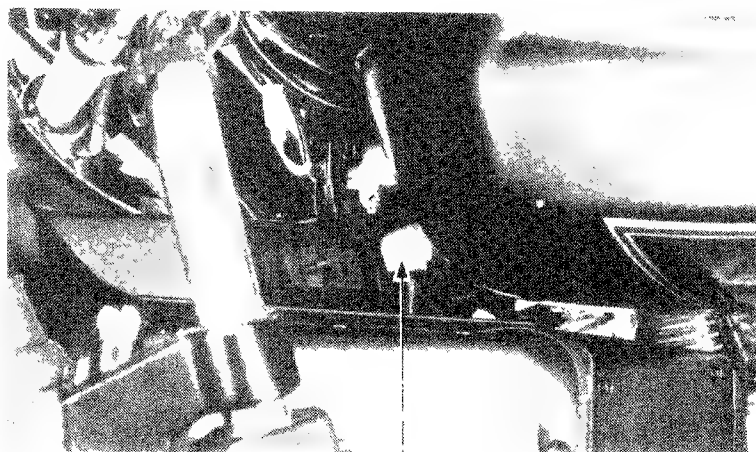
*Do not overtighten the lens mounting screws to prevent cracking the lens.*



## FAIRING AND BRACKET

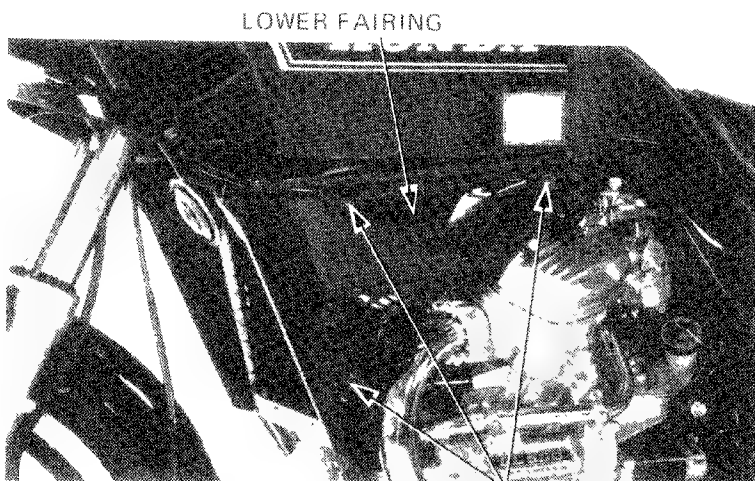
### REMOVAL

Disconnect the fairing wire harness from the main harness at the 9 pin connector on the left side of the fairing.



COUPLER

Remove the three screws and collars each side and remove the right and left cover fairing panels.



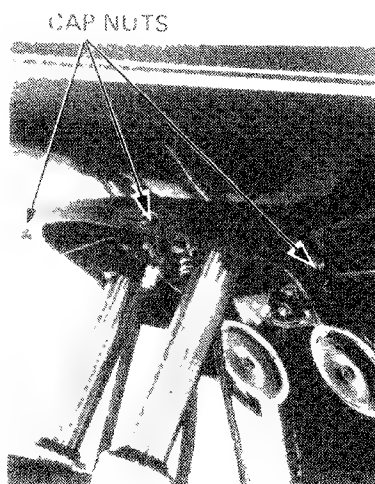
LOWER FAIRING

SCREWS

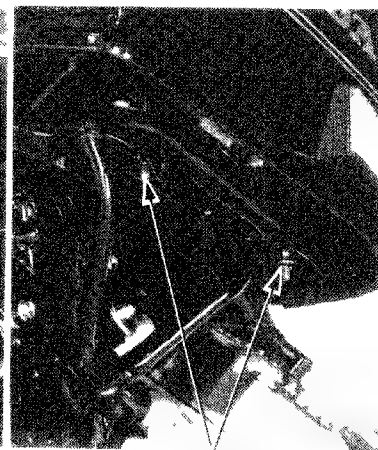
Remove the four cap nuts, flat washers and lock washers.

Remove the four flange nuts from the fairing sides.

Remove the fairing.



CAP NUTS



FLANGE NUTS

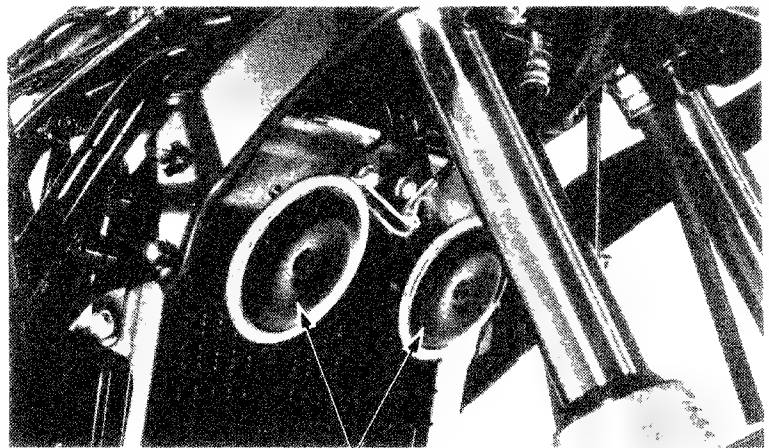


## INTERSTATE ACCESSORIES

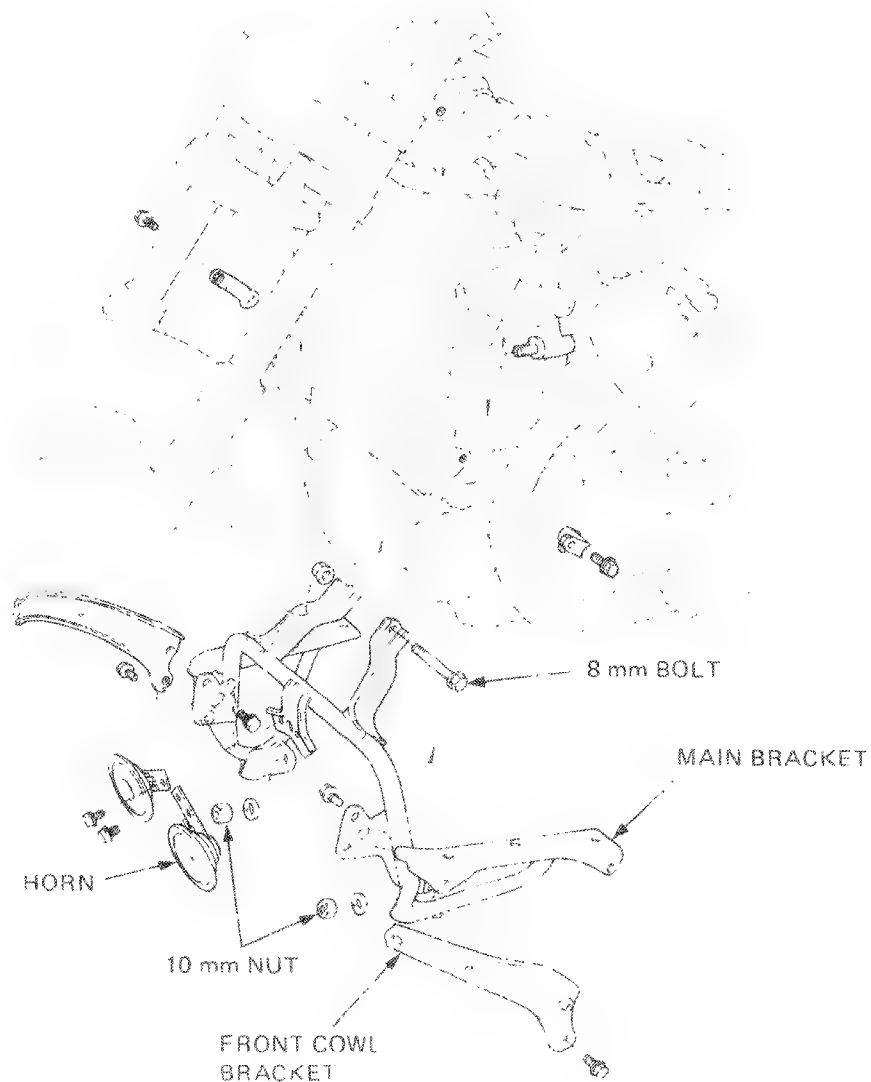
Connect the horn wires, remove the retaining bolts and remove the horns from the bracket.

Remove the front cowl brackets.

Remove the 10 mm nuts and 8 mm bolt, then carefully work the bracket out of the frame. Install in the reverse order of removal.



HORNS







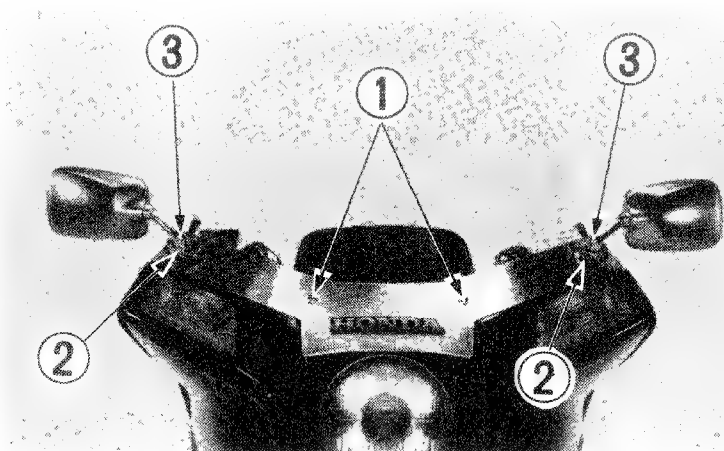
## ADJUSTMENT

### WINDSHIELD

The windshield height can be adjusted one inch in either direction from the standard position.

To adjust height, loosen the rearview mirror and trim screws in the order shown.

After adjusting, tighten the screws in the reverse order.



### HEADLIGHT

Vertical adjustments can be made with the beam adjusting knob. Horizontal adjustments are made by turning the adjustment screw located on the right side of the headlight.

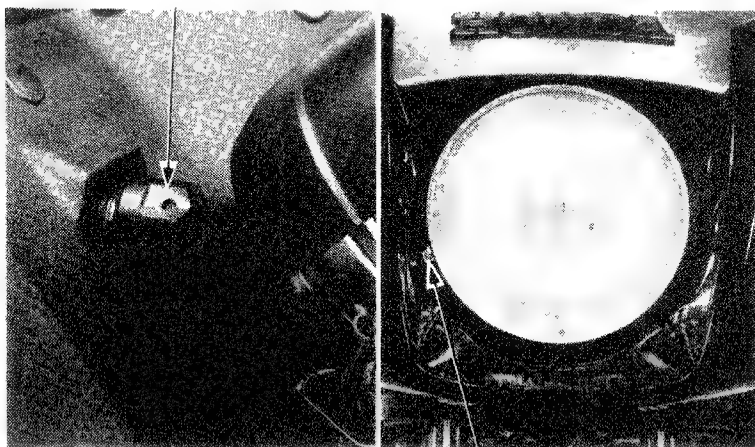
#### WARNING

*An improperly adjusted headlight may blind oncoming drivers, or it may fail to light the road for a safe distance.*

#### NOTE

Adjust the headlight beam as specified by local laws and regulations.

### BEAM ADJUSTING KNOB



ADJUSTING  
SCREW



**HONDA**  
GL500  
GL500 INTERSTATE

MEMO



# 21. TECHNICAL FEATURES

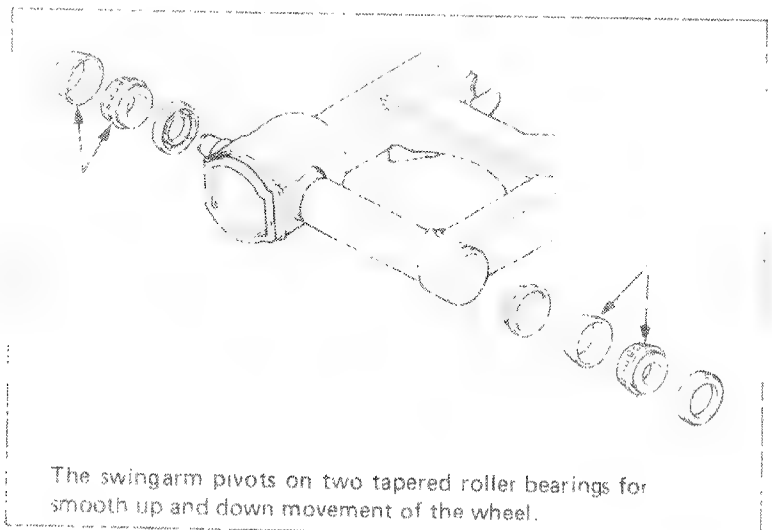
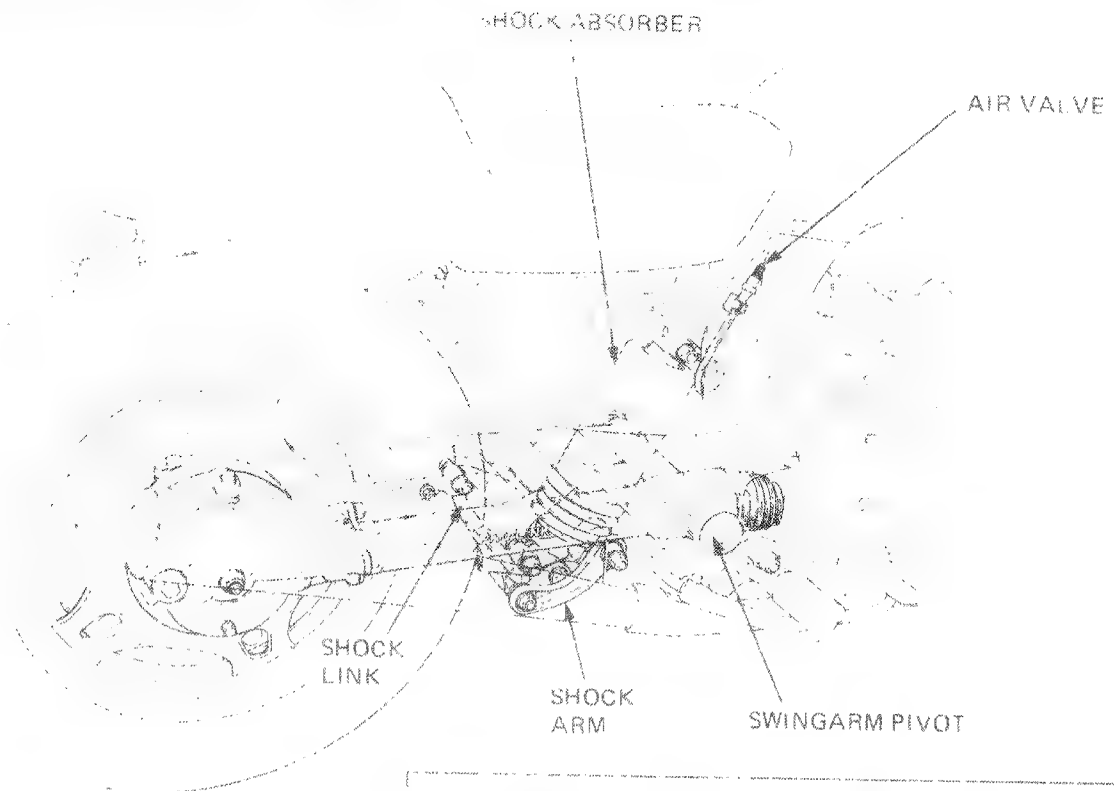
## PRO-LINK REAR SUSPENSION

### INTRODUCTION

The Pro-Link suspension system is a single shock absorber connected to the swingarm and the lower frame with a shock arm and shock link. The shock absorber and linkage are located in front of the rear tire.

The Pro-Link suspension system is designed with shock absorber and shock link components with the shock's matched spring and damping rates. This provides a progressively rising rate suspension. This provides relatively soft springing and damping during low wheel travel and increasing spring and damping rates to meet increasing wheel travel with greater resistance.

The Pro-Link suspension system allows the rear wheel to transfer more power to the ground, giving the rider greater comfort and the most possible control and toughness.



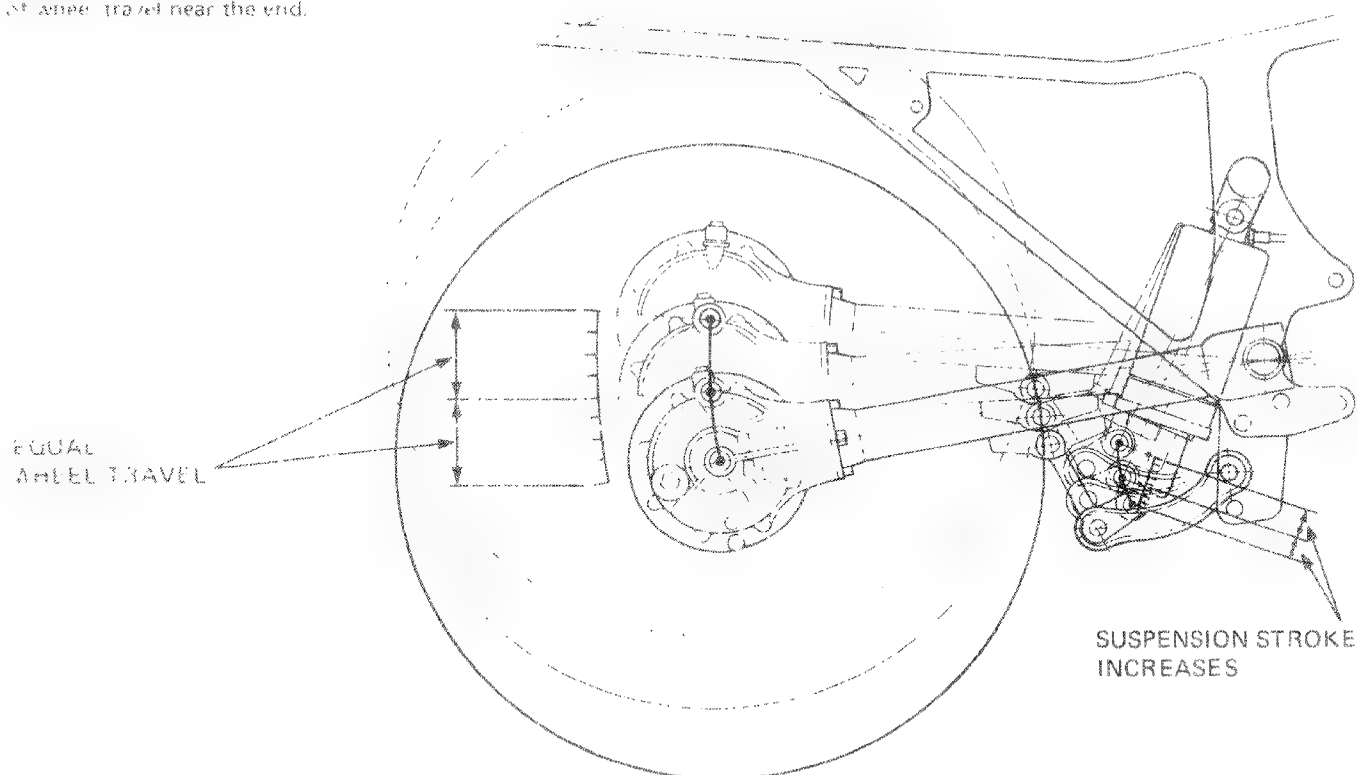


## TECHNICAL FEATURES

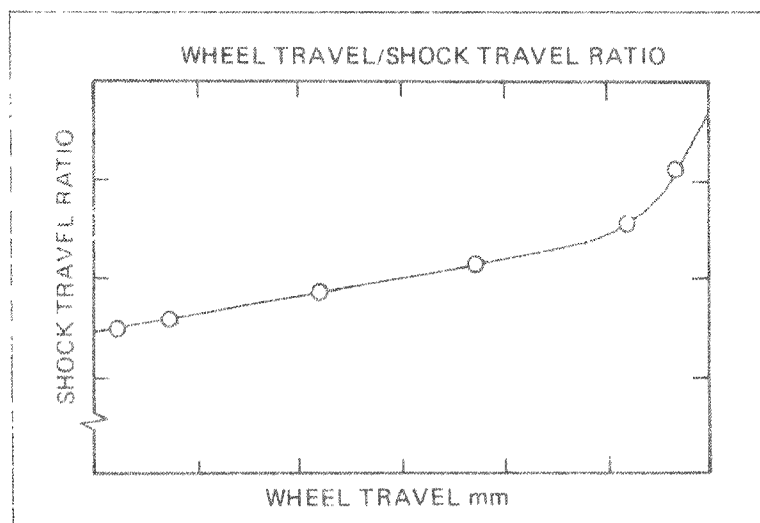
### OPERATION

As the wheel and swingarm are driven up by bumps, the shock absorber is compressed by the shock arm which is held in a precise arc by the shock link. As wheel travel increases the shock arm rises above the swingarm proportionately increasing absorber compression (more shock rod travel per unit of rear wheel travel).

This provides the progressive rise rate, the shock absorber moves only about one-fourth of wheel travel at the beginning and moves about one-third of wheel travel near the end.



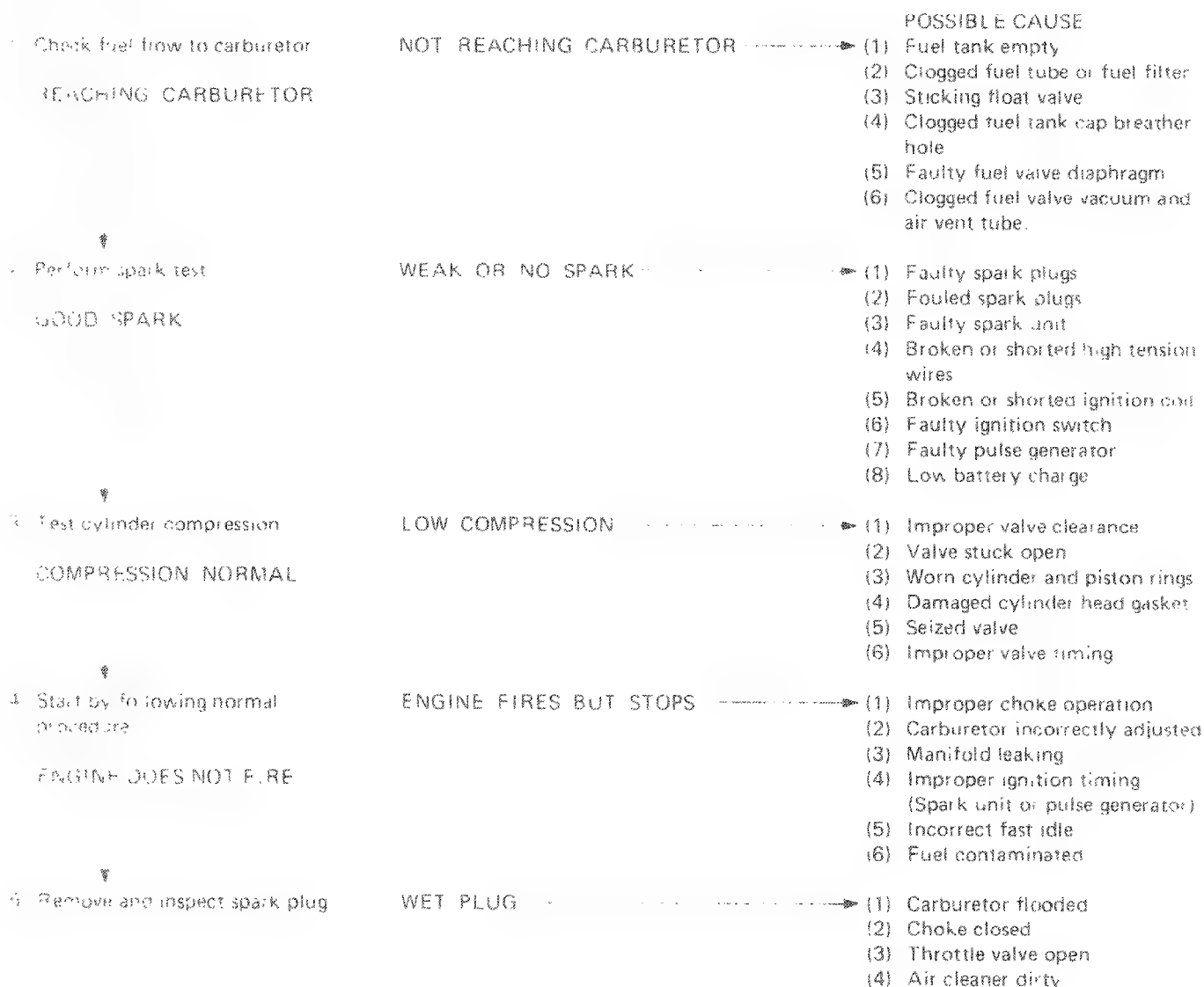
This graph shows the wheel travel/shock travel ratio through the entire stroke of a GL500 Pro-Link system.





# 22. TROUBLESHOOTING

## ENGINE DOES NOT START OR IS HARD TO START





## TROUBLESHOOTING

### ENGINE LACKS POWER

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Press wheel off ground and spin freely</p> <p>WHEELS SPIN FREELY</p> <p>↓</p> <p>Check tire pressure</p> <p>PRESSURE NORMAL</p> <p>↓</p> <p>Accelerate rapidly from low to high</p> <p>ENGINE SPEED LOWERED WHEN CLUTCH IS RELEASED</p> <p>↓</p> <p>Accelerate lightly</p> <p>ENGINE SPEED INCREASES</p> <p>↓</p> <p>Check ignition timing</p> <p>Timing correct</p> <p>↓</p> <p>Check valve clearance</p> <p>VALVE CLEARANCE CORRECT</p> <p>↓</p> <p>Check cylinder compression</p> <p>COMPRESSION NORMAL</p> <p>↓</p> <p>Check carburetor for clogging</p> <p>CARBURETOR CLEANED</p> <p>↓</p> <p>Check spark plug</p> <p>SPARK PLUG Fouled or discolored</p> | <p>WHEELS DO NOT SPIN FREELY</p> <p>PRESSURE LOW</p> <p>ENGINE SPEED CHANGED WHEN CLUTCH IS RELEASED</p> <p>ENGINE SPEED NOT INCREASED</p> <p>INCORRECT</p> <p>INCORRECT</p> <p>TOO LOW</p> <p>CLOGGED</p> <p>FOULED OR DISCOLORED</p> | <p>POSSIBLE CAUSE</p> <p>► (1) Brake dragging<br/>(2) Worn or damaged wheel bearing<br/>(3) Wheel bearing needs lubrication<br/>(4) Final gear bearing damaged</p> <p>► (1) Punctured tire<br/>(2) Faulty tire valve</p> <p>► (1) Clutch jipping<br/>(2) Worn clutch disc plate<br/>(3) Warped clutch disc plate</p> <p>► (1) Carburetor choke closed<br/>(2) Clogged air cleaner<br/>(3) Restricted fuel flow<br/>(4) Clogged fuel tank breather tube<br/>(5) Clogged muffler</p> <p>► (1) Faulty spark unit<br/>(2) Faulty pulse generator<br/>(3) Faulty ignition advancer</p> <p>► (1) Improper valve adjustment<br/>(2) Worn valve seat</p> <p>► (1) Valve stuck open<br/>(2) Worn cylinder and piston rings<br/>(3) Leaking head gasket<br/>(4) Improper valve timing</p> <p>► (1) Carburetor not serviced frequently enough</p> <p>► (1) Plugs not serviced frequently enough<br/>(2) Spark plug with incorrect heat range</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                |                                     |                                                                                                                                                                                       |
|------------------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Oil level (oil level indicator) is incorrect   | INCORRECT OIL LEVEL                 | → (1) Oil level too high<br>(2) Oil level too low<br>(3) Contaminated oil                                                                                                             |
| Remove cylinder head cover and check oil level | VALVE TRAIN NOT LUBRICATED PROPERLY | → (1) Clogged oil passage<br>(2) Clogged oil control orifice                                                                                                                          |
| VALVE TRAIN LUBRICATED PROPERLY                |                                     |                                                                                                                                                                                       |
| Engine is overheating                          | OVERHEATING                         | → (1) Excessive carbon build-up in combustion chamber<br>(2) Use of poor quality fuel<br>(3) Clutch slipping                                                                          |
| Engine does not overheat                       |                                     |                                                                                                                                                                                       |
| Accelerator is run at high speed               | ENGINE KNOCKS                       | → (1) Worn piston and cylinder<br>(2) Wrong type of fuel<br>(3) Excessive carbon build-up in combustion chamber<br>(4) Ignition timing too advanced<br>(Faulty spark unit or advance) |
| ENGINE DOES NOT KNOCK                          |                                     |                                                                                                                                                                                       |

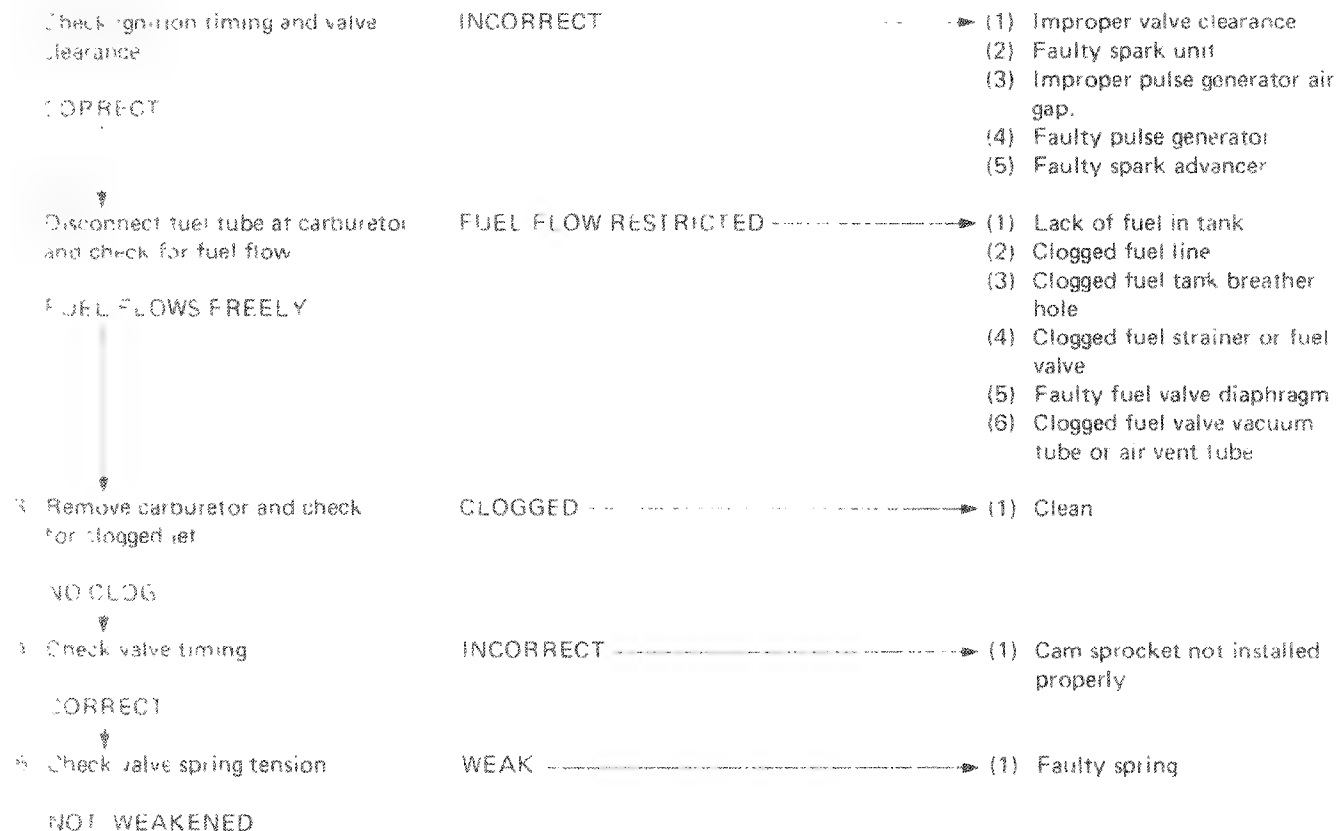
## POOR PERFORMANCE AT LOW AND IDLE SPEEDS

|                                           |                                               |                                                                                                                                |
|-------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Check ignition timing and valve clearance | INCORRECT IGNITION TIMING AND VALVE CLEARANCE | POSSIBLE CAUSE<br>→ (1) Improper valve clearance<br>(2) Improper ignition timing (Faulty spark unit or spark advance)          |
| Check fuel jet and pilot screw adjustment | INCORRECT FUEL JET AND PILOT SCREW ADJUSTMENT | → See Fuel System Section                                                                                                      |
| Check for leaking manifold                | LEAKING MANIFOLD                              | → (1) Deteriorated insulator O-ring<br>(2) Loose carburetor<br>(3) Damaged fuel valve vacuum tube                              |
| Check for spark test                      | WEAK OR INTERMITTENT SPARK                    | → (1) Faulty, carbon or wet fouled spark plug<br>(2) Faulty spark unit<br>(3) Faulty ignition coil<br>(4) Faulty spark advance |



## TROUBLESHOOTING

### POOR PERFORMANCE AT HIGH SPEED



### POOR HANDLING ————— Check tire pressure

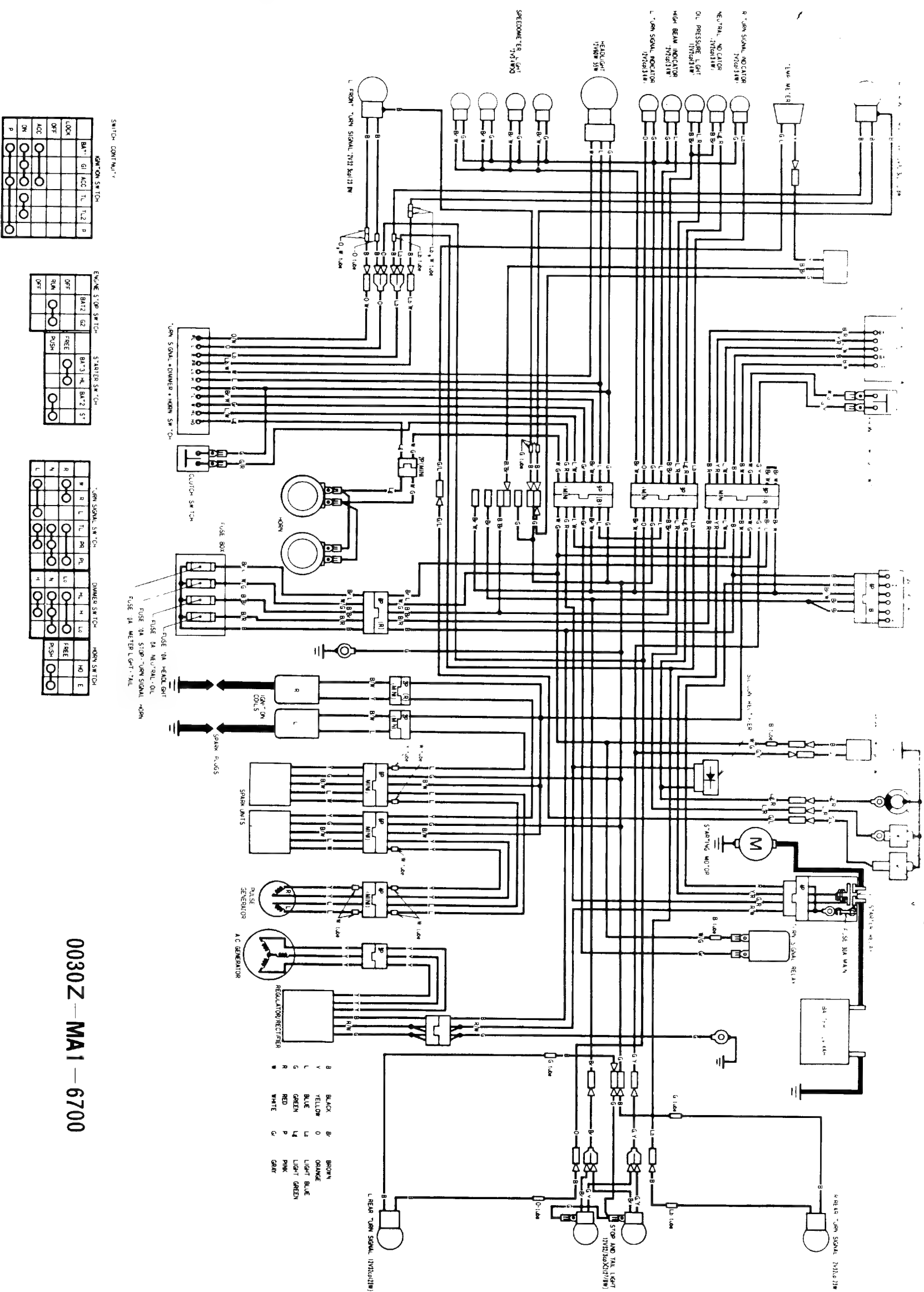
- 1 If steering is heavy —————→ (1) Steering top thread nut too tight  
(2) Damaged steering head bearings
- 2 If either wheel is wobbling —————→ (1) Excessive wheel bearing play  
(2) Distorted rim  
(3) Improperly installed wheel hub  
(4) Swing arm pivot bearing excessively worn  
(5) Distorted frame  
(6) Swingarm pivot adjusting bolt too tight
- 3 If the motorcycle pulls to one side —————→ (1) Bent frame  
(2) Front and rear wheels not aligned  
(3) Bent front fork tube or fork bridge  
(4) Bent swingarm





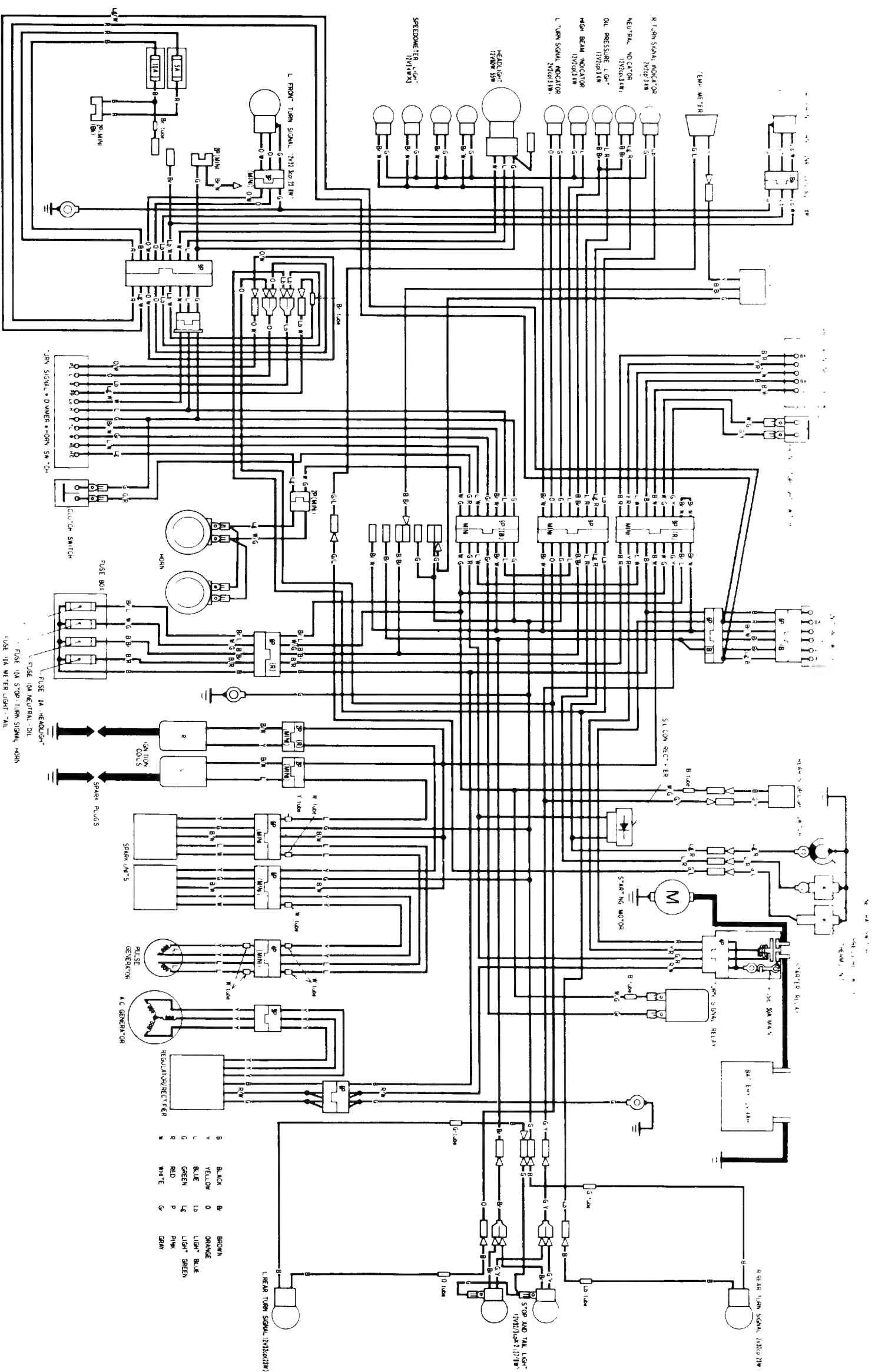
## WIRING DIAGRAM

GL500



0030Z—MAI—6700

# GL500 INTERSTATE



0030Z-MA1-7700



## INTRODUCTION

This Addendum contains information for the 1982 GL 500 GL500 Interstate.

Refer to the base shop manual for service procedures and data not included.

ALL INFORMATION, ILLUSTRATIONS, DIRECTIONS AND SPECIFICATIONS INCLUDED IN THIS PUBLICATION ARE BASED ON THE LATEST PRODUCT INFORMATION AVAILABLE AT THE TIME OF APPROVAL FOR PRINTING. HONDA MOTOR CO., LTD. RESERVES THE RIGHT TO MAKE CHANGES AT ANY TIME WITHOUT NOTICE AND WITHOUT INCURRING ANY OBLIGATION WHATEVER. NO PART OF THIS PUBLICATION MAY BE REPRODUCED WITHOUT WRITTEN PERMISSION.

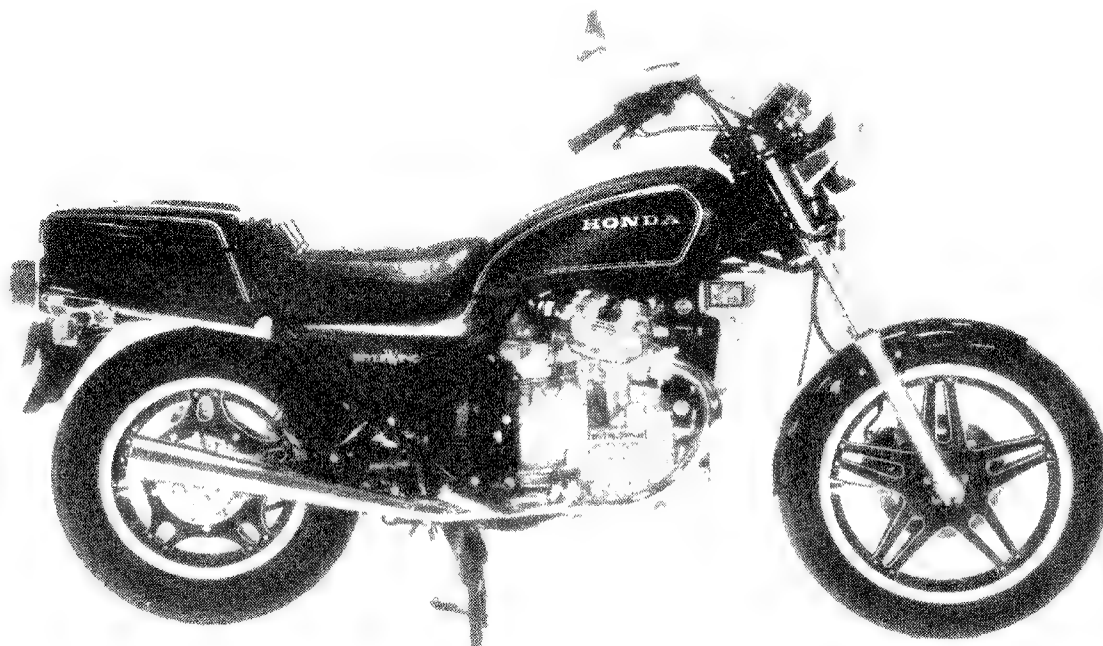
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## CONTENTS

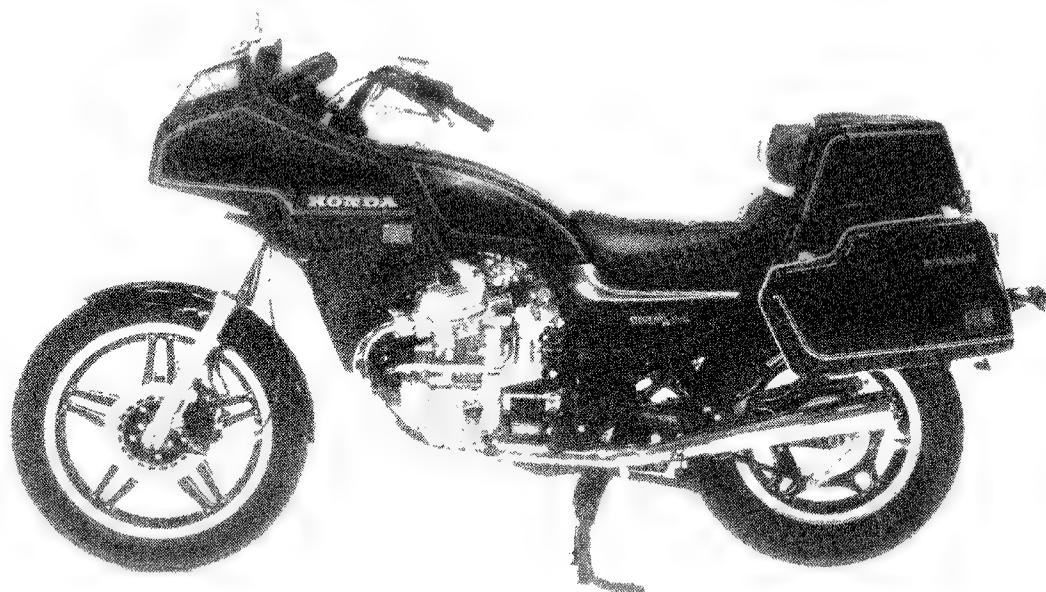
|                         |      |
|-------------------------|------|
| 1. MODEL IDENTIFICATION | 23-2 |
| 2. GENERAL INFORMATION  | 23-3 |
| Specifications          |      |
| Cable & Harness Routing |      |
| 3. MAINTENANCE          | 23-4 |
| Maintenance Schedule    |      |
| Oil Recommendation      |      |
| Spark Plugs             |      |
| Fuel Strainer           |      |
| 4. WIRING DIAGRAMS      | 23-7 |



## I. MODEL IDENTIFICATION



GL500 BEGINNING WITH F/N PC020 • CM100001



GL500 INTERSTATE BEGINNING WITH F/N PC021 • CM100001

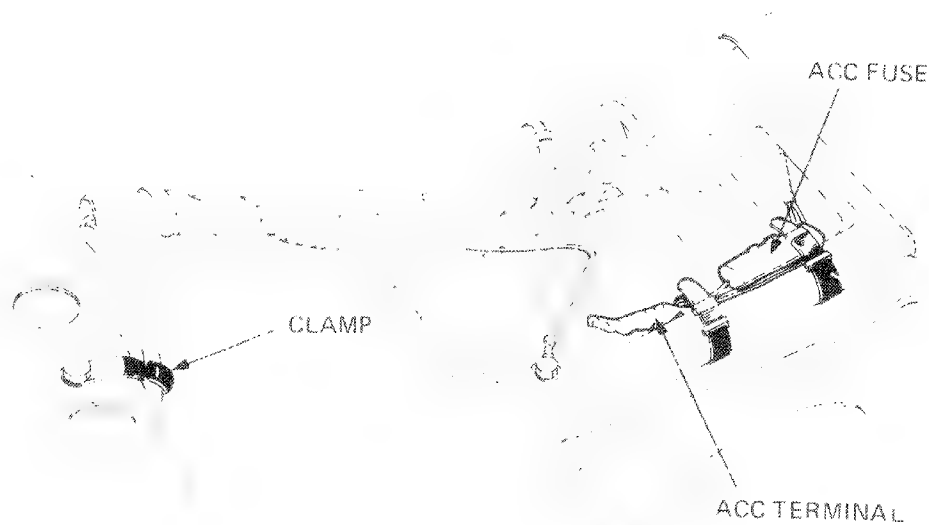


## II. GENERAL INFORMATION SPECIFICATIONS

Specifications listed are new for 1982. Refer to the base manual for specifications not listed here.

| ITEM       |                                | GL500                          | GL500 INTERSTATE                      |
|------------|--------------------------------|--------------------------------|---------------------------------------|
| DIMENSIONS | Overall width                  | 875 mm (34.4 in)               | 875 mm (34.4 in)                      |
|            | Overall height                 | 1,178 mm (46.4 in)             | 1,504 mm (59.2 in)                    |
|            | Ground clearance               | 152 mm (6.0 in)                | 148 mm (5.8 in)                       |
| ENGINE     | Engine weight                  | 65 kg (143 lb)                 |                                       |
| ELECTRICAL | Spark plug                     |                                |                                       |
|            | Standard                       | DR8ES-L (NGK) or X24ESR-U (ND) |                                       |
|            | For extended high speed riding | DR8ES (NGK) or X27ESR-U (ND)   |                                       |
|            | Fuse                           | 5 A, 10 A, 30 A (Main fuse)    | 1 A, 2 A, 5 A, 10 A, 30 A (Main fuse) |

## CABLE & HARNESS ROUTING





### III. MAINTENANCE MAINTENANCE SCHEDULE

1. ALWAYS REFER TO THE INSPECTION CHART IN THE Owner's Manual at each scheduled maintenance.

2. ASPECTS TO CLEAN, ADJUST, LUBRICATE OR REPLACE IF NECESSARY:

3. YEAR

4. REFERENCE

5. ODOMETER

6. FREQUENCY

| FREQUENCY                  | WHICH EVER COMES FIRST | ODOMETER READING [NOTE 3] |                        |                        |                         |                          |                          |                          |                          | REFER TO PAGE |
|----------------------------|------------------------|---------------------------|------------------------|------------------------|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------|
|                            |                        | 500 mi<br>(800 km)        | 1,000 mi<br>(1,600 km) | 4,000 mi<br>(6,400 km) | 8,000 mi<br>(12,800 km) | 12,000 mi<br>(19,200 km) | 16,000 mi<br>(25,600 km) | 20,000 mi<br>(32,000 km) | 24,000 mi<br>(38,400 km) |               |
| 1. AIR FILTERS             |                        |                           |                        | I                      |                         | I                        |                          | I                        |                          | 3-4           |
| 2. AIR STRAINER            |                        |                           |                        | C                      |                         | C                        | C                        | C                        |                          | 23-6          |
| 3. THROTTLE OPERATION      |                        | I                         |                        | I                      |                         | I                        |                          | I                        |                          | 3-4           |
| 4. CARBURETOR CHOKE        |                        |                           |                        | I                      |                         | I                        |                          | I                        |                          | 3-5           |
| 5. AIR CLEANER             | NOTE 1                 |                           | C                      | R                      | C                       | R                        | C                        | R                        |                          | 3-5           |
| 6. CRANKCASE BREATHER      | NOTE 2                 |                           | C                      | C                      | C                       | C                        | C                        | C                        |                          | 3-6           |
| 7. SPARK PLUGS             |                        | R                         | R                      | R                      | R                       | R                        | R                        | R                        |                          | 23-7          |
| 8. VALVE CLEARANCE         |                        | I                         |                        | I                      |                         | I                        |                          | I                        |                          | 3-7           |
| 9. ENGINE OIL              | YEAR                   | R                         |                        | R                      |                         | R                        |                          | R                        |                          | 2-2           |
| 10. ENGINE OIL FILTER      | YEAR                   | R                         |                        | R                      |                         | R                        |                          | R                        |                          | 2-2           |
| 11. CAM CHAIN TENSION      |                        | A                         | A                      | A                      | A                       | A                        | A                        | A                        |                          | 3-9           |
| 12. CARBURETOR SYNCHRONIZE |                        | I                         |                        | I                      |                         | I                        |                          | I                        |                          | 3-9           |
| 13. CARBURETOR IDLE SPEED  |                        | I                         | I                      | I                      | I                       | I                        | I                        | I                        |                          | 3-10          |
| 14. RADIATOR COOLANT       |                        |                           |                        |                        |                         |                          |                          | *R                       |                          | 3-10          |
| 15. RADIATOR CORE          |                        |                           |                        | I                      |                         | I                        |                          | I                        |                          | 3-10          |
| 16. COOLING SYSTEM HOSES   |                        |                           |                        |                        |                         | I                        |                          | I                        |                          | 3-11          |
| 17. DRIVE SHAFT JOINT      |                        |                           |                        | L                      |                         | L                        |                          | L                        |                          | 2-3           |
| 18. FINAL DRIVE OIL        |                        |                           |                        | I                      |                         | I                        |                          | R                        |                          | 2-3           |
| 19. BATTERY                | MONTH                  | I                         | I                      | I                      | I                       | I                        | I                        | I                        |                          | 3-11          |
| 20. BRAKE FLUID (FRONT)    | MONTH / 2 YEARS *R     | I                         | I                      | I                      | I                       | I                        | I                        | I                        | *R                       | 3-11          |
| 21. BRAKE SHOE PAD WEAR    |                        |                           | I                      | I                      | I                       | I                        | I                        | I                        |                          | 3-12          |
| 22. BRAKE SYSTEM (REAR)    |                        |                           |                        | I                      |                         | I                        |                          | I                        |                          | 3-12          |
| 23. BRAKE LIGHT SWITCH     |                        |                           |                        | I                      |                         | I                        |                          | I                        |                          | 3-13          |
| 24. HEADLIGHT AIM          |                        |                           |                        |                        |                         | I                        |                          | I                        |                          | 3-13          |
| 25. CLUTCH                 |                        |                           | I                      | I                      | I                       | I                        | I                        | I                        |                          | 3-14          |
| 26. SIDE STAND             |                        |                           |                        | I                      |                         | I                        |                          | I                        |                          | 3-14          |
| 27. SUSPENSION             |                        |                           |                        | I                      |                         | I                        |                          | I                        |                          | 3-15          |
| 28. NUTS, BOLTS, FASTENERS |                        |                           |                        | I                      |                         | I                        |                          | I                        |                          | 3-16          |
| 29. WHEELS                 |                        |                           |                        | I                      |                         | I                        |                          | I                        |                          | 3-16          |
| 30. STEERING HEAD BEARING  |                        |                           |                        | I                      |                         | I                        |                          | I                        |                          | 3-17          |

THE MOTORCYCLE SHOULD BE SERVICED BY AN AUTHORIZED HONDA DEALER, UNLESS THE OWNER HAS PROPER TOOLS AND SERVICE DATA AND IS MECHANICALLY QUALIFIED.

IN THE INTEREST OF SAFETY, WE RECOMMEND THESE ITEMS BE SERVICED ONLY BY AN AUTHORIZED HONDA DEALER.

NOTE 1: Service more frequently when riding in dusty areas.

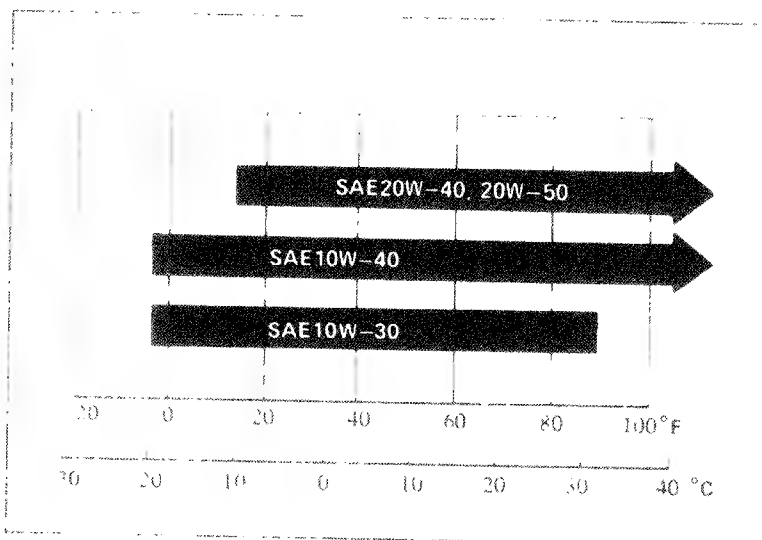
NOTE 2: Service more frequently when riding in rain, or at full throttle, or after the motorcycle has been washed or overturned.

NOTE 3: Odometer readings indicate approximate frequency intervals established here.



## ENGINE OIL RECOMMENDATION

USE HONDA 4 STROKE OIL or equivalent  
API SERVICE CLASSIFICATION: SE or SF  
Viscosity: SAE 10W-40



## SPARK PLUGS

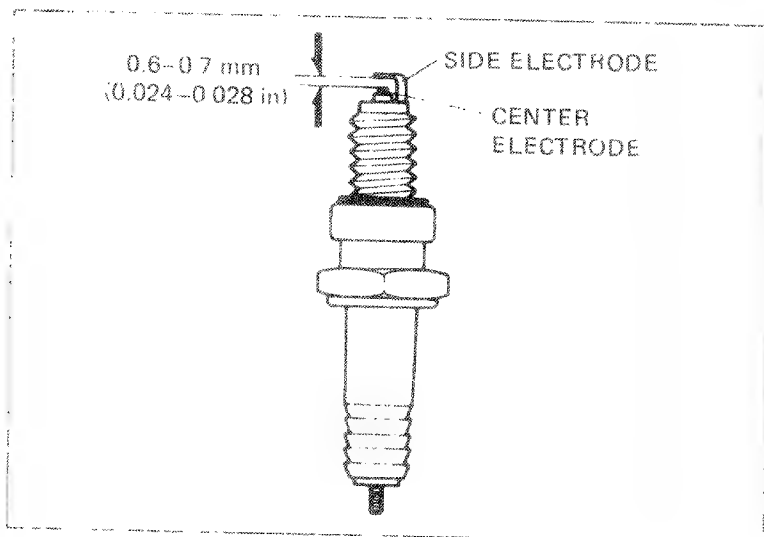
### RECOMMENDED SPARK PLUGS:

|     | Standard | For extended high speed riding |
|-----|----------|--------------------------------|
| NGK | DR8ES-L  | DR8ES                          |
| ND  | X24ESR-U | X27ESR-U                       |

Clean the dirt from around the spark plug base.  
Disconnect the spark plug caps.  
Remove and discard the spark plugs.  
Measure the new spark plug gaps using a wire-type  
feeler gauge.

**SPARK PLUG GAP** 0.6-0.7 mm  
(0.024-0.028 in)

Adjust by bending the side electrode carefully.  
After the plug washer attached, thread the spark  
plug in by hand to prevent crossthreading.  
Tighten the spark plugs another 1/2 turn with a  
spark plug wrench to compress the plug washer.  
Reattach the spark plug caps.





## FUEL STRAINER

Turn the fuel valve OFF.

Remove the fuel cup, O-ring and filter screen, draining the gasoline into a suitable container.

### **WARNING**

*Gasoline is flammable and is explosive under certain conditions.*

*Do not smoke or allow flames or sparks near the equipment while draining fuel.*

Wash the fuel cup and filter screen in clean non flammable or high flash point solvent.

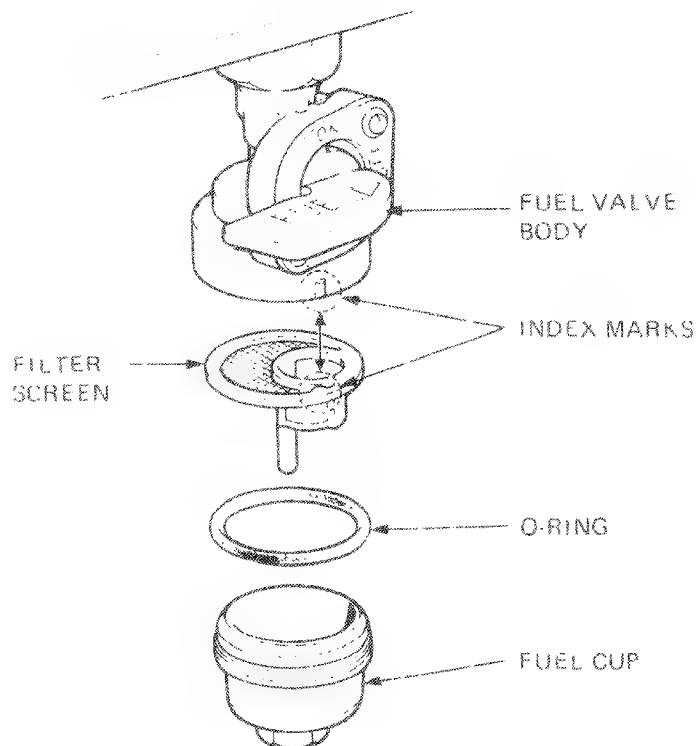
Reinstall the filter screen, aligning the index marks on the fuel valve body and the filter screen. Install a new O-ring into the fuel valve body.

Reinstall the fuel cup, making sure the new O-ring is in place.

Hand-tighten the cup, then torque it to specification.

**Torque:** 3-5 N·m (0.3-0.5 kg-m, 2-4 ft-lb)

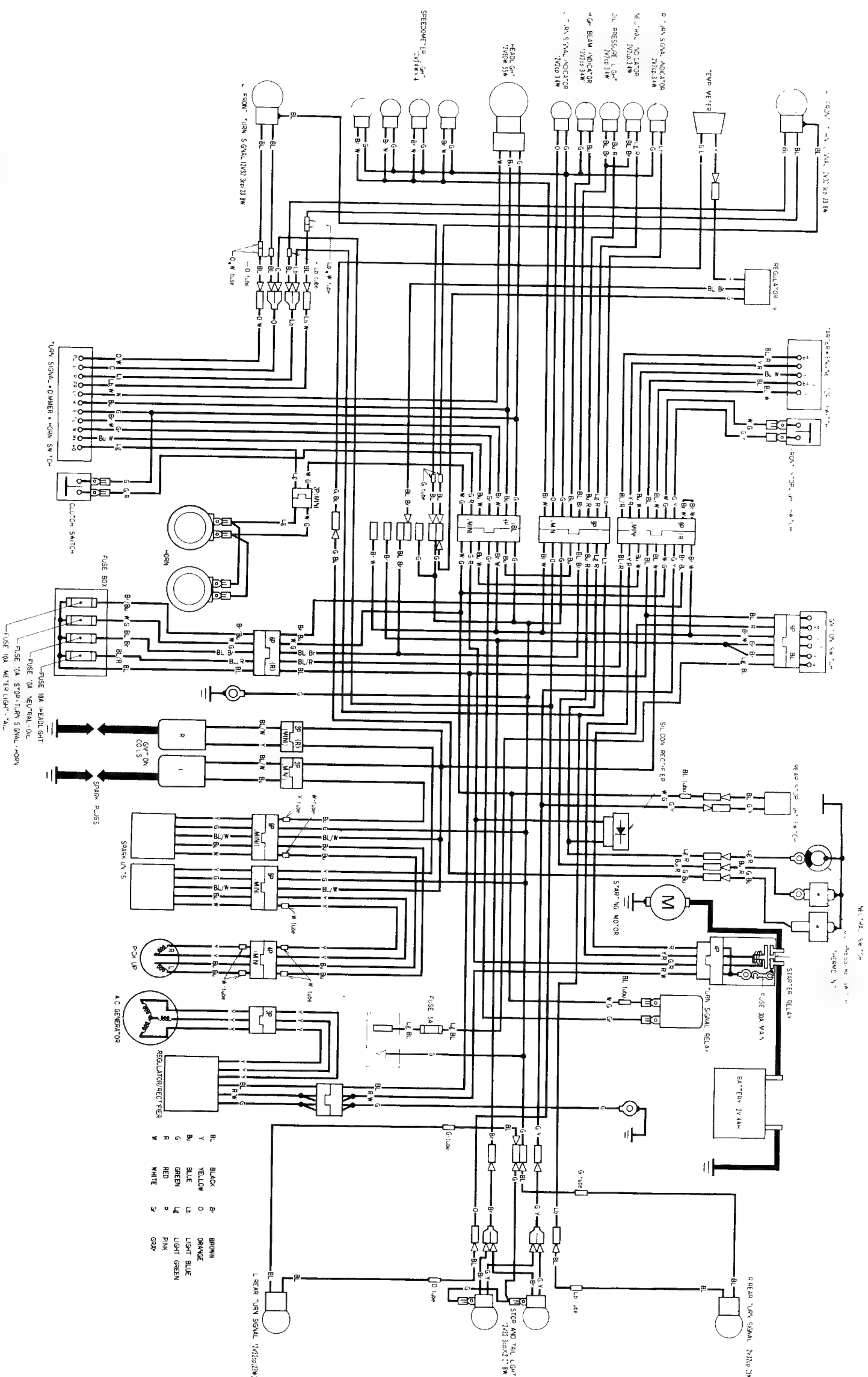
After starting, turn the fuel valve ON and check for fuel leaks.





# WIRING DIAGRAM

GL500



- BLACK B
- YELLOW Y
- BLUE BL
- GREEN G
- RED R
- WHITE W
- BROWN BR
- ORANGE O
- LIGHT BLUE LB
- LIGHT GREEN LG
- PINK P
- GRAY GR

IGNITION SWITCH

|      |     |     |     |     |
|------|-----|-----|-----|-----|
| LOCK | IGN | ACC | IGN | IGN |
| LOCK | IGN | ACC | IGN | IGN |
| LOCK | IGN | ACC | IGN | IGN |
| LOCK | IGN | ACC | IGN | IGN |

ENGINE STOP SWITCH

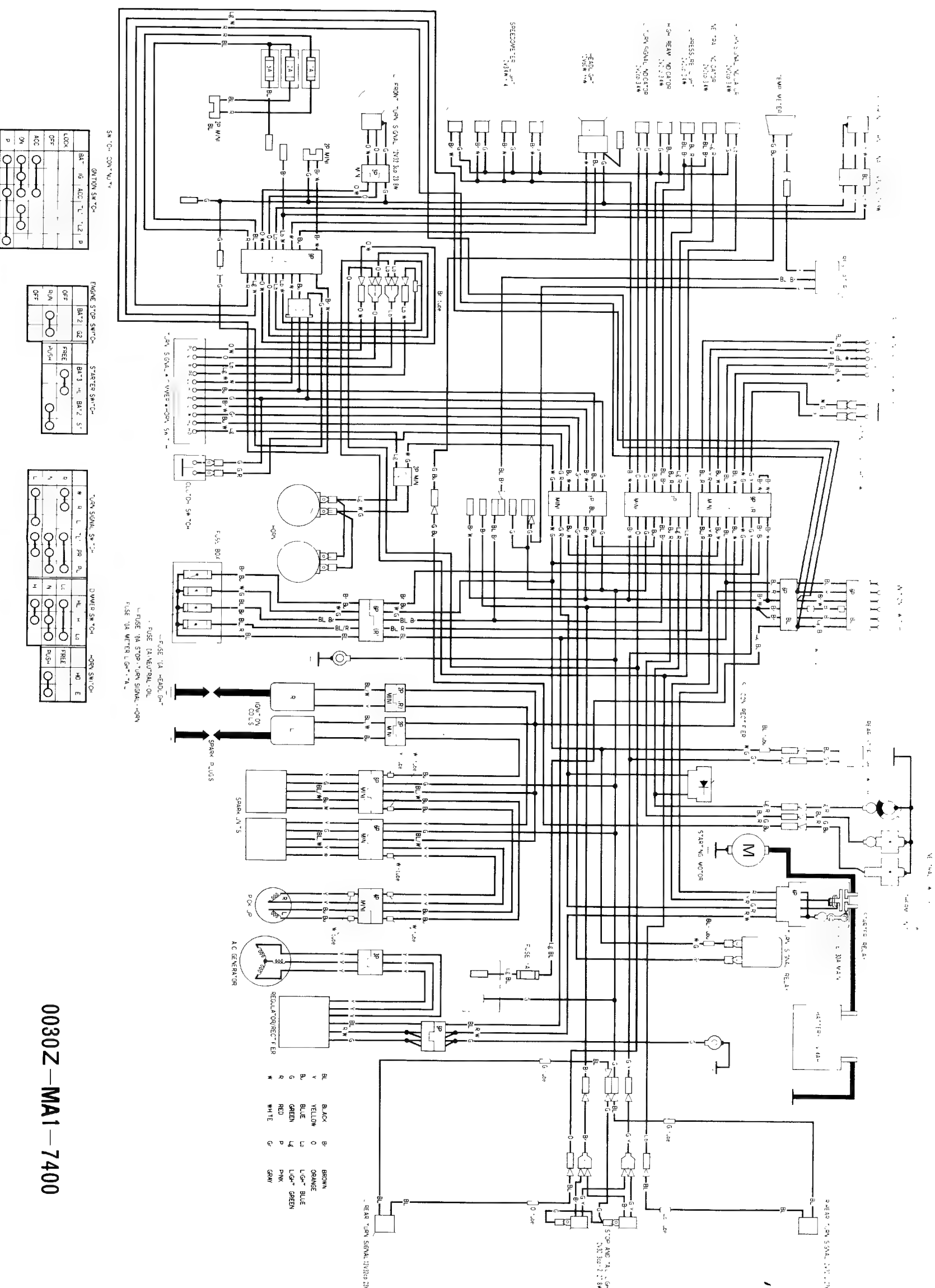
|      |      |      |      |      |
|------|------|------|------|------|
| STOP | STOP | STOP | STOP | STOP |
| STOP | STOP | STOP | STOP | STOP |
| STOP | STOP | STOP | STOP | STOP |
| STOP | STOP | STOP | STOP | STOP |

TURN SIGNAL SWITCH

|      |      |      |      |      |
|------|------|------|------|------|
| TURN | TURN | TURN | TURN | TURN |
| TURN | TURN | TURN | TURN | TURN |
| TURN | TURN | TURN | TURN | TURN |
| TURN | TURN | TURN | TURN | TURN |

0030Z—MA1—7300

# GL500 INTERSTATE



0030Z—MA1—7400



# HONDA

GL650  
GL650 INTERSTATE

'83 ADDENDUM

## INTRODUCTION

This Addendum contains information for the 1983 GL650 GL650 Interstate.

Refer to the GL500 base shop manual and '82 Addendum for service procedures and data not included.

All information, illustrations, directions and specifications included in this publication are based on the latest product information available at the time of approval for printing. Honda Motor Co., Ltd. reserves the right to make changes at any time without notice and without incurring any obligation whatever. No part of this publication may be reproduced without written permission.

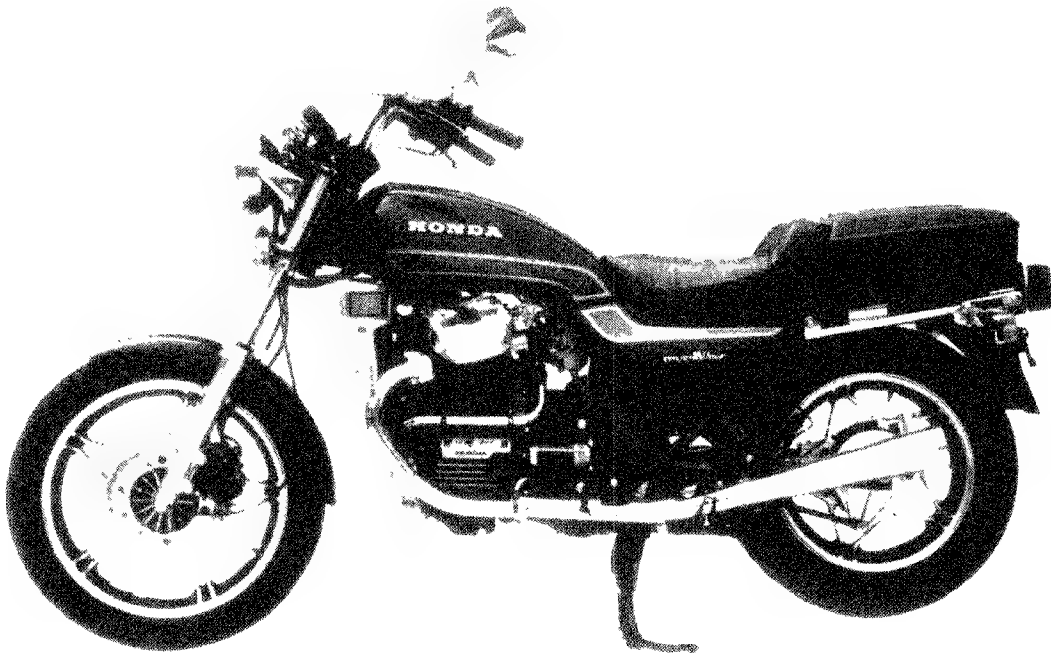
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## CONTENTS

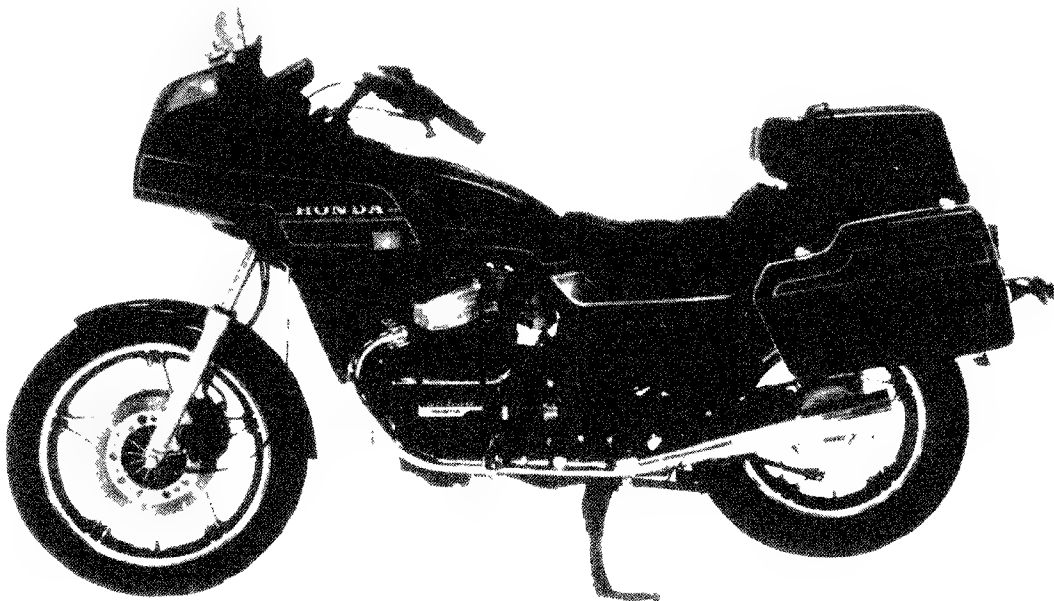
|                            |       |
|----------------------------|-------|
| 1. MODEL IDENTIFICATION    | 24-2  |
| 2. GENERAL INFORMATION     | 24-3  |
| 3. SERVICE DATA            | 24-7  |
| 4. LUBRICATION             | 24-10 |
| 5. MAINTENANCE             | 24-11 |
| 6. FUEL SYSTEM             | 24-12 |
| 7. CLUTCH/OIL PUMP         | 24-20 |
| 8. COOLING SYSTEM          | 24-22 |
| 9. CAM CHAIN               | 24-27 |
| 10. TRANSMISSION           | 24-29 |
| 11. FRONT WHEEL/SUSPENSION | 24-30 |
| 12. REAR WHEEL             | 24-32 |
| 13. SWITCHES               | 24-33 |
| 14. WIRING DIAGRAMS        | 24-34 |



## 1. MODEL IDENTIFICATION



GL650 BEGINNING WITH F N CR100 - DM00004



GL500 INTERSTATE BEGINNING WITH F N RC101 - DM00015

**HONDA**

GL650

GL650 INTERSTATE

**'83 ADDENDUM**

## 2. GENERAL INFORMATION

### SPECIFICATIONS

The specifications listed are new for 1983. Refer to the base manual for specifications not listed here.

| Item       |                                            | GL650                                                                         | GL650 INTERSTATE                           |
|------------|--------------------------------------------|-------------------------------------------------------------------------------|--------------------------------------------|
| DIMENSIONS | Overall length                             | 2,215 mm (87.2 in)                                                            | 2,305 mm (90.7 in)                         |
|            | Overall width                              | 890 mm (35.0 in)                                                              | 885 mm (34.8 in)                           |
|            | Overall height                             | 1,184 mm (46.6 in)                                                            | 1,480 mm (58.3 in)                         |
|            | Seat height                                | 775 mm (30.5 in)                                                              | 770 mm (30.3 in)                           |
|            | Foot peg height                            | 320 mm (12.6 in)                                                              | 315 mm (12.4 in)                           |
|            | Ground clearance                           | 150 mm (5.9 in)                                                               | 145 mm (5.7 in)                            |
|            | Dry weight                                 | 217 kg (478 lbs)                                                              | 240 kg (529 lbs)                           |
|            | Curb weight (Wet)                          | 234 kg (516 lbs)                                                              | 257 kg (567 lbs)                           |
| CHASSIS    | F suspension travel                        | Telescopic 150 mm (5.9 in)                                                    |                                            |
|            | R suspension travel                        | Swing arm 110 mm (4.3 in)                                                     |                                            |
|            | F suspension air pressure                  | 40-120 kPa (0.4-1.2 kg/cm <sup>2</sup> , 5.5-17 psi)                          |                                            |
|            | R suspension air pressure                  | 0-500 kPa 100-500 kPa                                                         |                                            |
|            | Front tire size                            | 10-5.0 kg/cm <sup>2</sup> , 0-70 psi; 11.0-5.0 kg/cm <sup>2</sup> , 14-70 psi |                                            |
|            | Rear tire size                             | 3.50 H-19-4PR Tubeless                                                        |                                            |
|            |                                            | 120/90-16 67H Tubeless                                                        |                                            |
|            |                                            |                                                                               |                                            |
| TIRE       | up to 90 kg (200 lbs) load                 | Front                                                                         | 225 kPa (2.25 kg/cm <sup>2</sup> , 32 psi) |
|            |                                            | Rear                                                                          | 225 kPa (2.25 kg/cm <sup>2</sup> , 32 psi) |
|            | Up to vehicle capacity load                | Front                                                                         | 225 kPa (2.25 kg/cm <sup>2</sup> , 32 psi) |
|            |                                            | Rear                                                                          | 280 kPa (2.80 kg/cm <sup>2</sup> , 40 psi) |
|            |                                            |                                                                               |                                            |
|            | F brake and lining swept area (dual discs) | Disc brakes 952 cm <sup>2</sup> (147.6 sq. in.)                               |                                            |
|            | Front fork oil capacity                    | 275 cc (9.3 oz) ATF after disassembly ATF after draining                      |                                            |
|            | Rear shock oil capacity                    | 669 cc (22.6 oz) ATF                                                          |                                            |
| ENGINE     | Engine weight                              | 82.5 x 63 mm (3.248 x 2.480 in)                                               |                                            |
|            | Bore and stroke                            | 674 cm <sup>3</sup> (41.3 cu. in)                                             |                                            |
|            | Displacement                               | 9.8.1                                                                         |                                            |
|            | Compression ratio                          | 3.6 lit (3.8 US qt, 3.1 Imp qt) after disassembly                             |                                            |
|            | Oil capacity                               | 3.0 lit (3.1 US qt, 2.6 Imp qt) after draining                                |                                            |
|            | Oil type                                   | SAE 10W-40 SE or SF, Honda 4 stroke oil or equivalent                         |                                            |

### TOOLS

| Tool Description | Tool #        |
|------------------|---------------|
| Fork seal driver | 07947 3710101 |



|                                | Item | GL650                               | GL650 INTERSTATE |
|--------------------------------|------|-------------------------------------|------------------|
| Valve clearance                | in   | 0.10 mm (0.004 in)                  |                  |
| Valve clearance                | in   | 0.12 mm (0.005 in)                  |                  |
| Carburetor type                |      | VP type 36 mm (1.4 in) venturi bore |                  |
| Identification number          |      | VB2AA                               |                  |
| Pilot screw                    |      | See page 24-12                      |                  |
| Primary reduction ratio        |      | 2.144 (35/74)                       |                  |
| Gear ratio 1st                 |      | 2.500 (16/40)                       |                  |
| Gear ratio 2nd                 |      | 1.714 (21/36)                       |                  |
| Gear ratio 3rd                 |      | 1.280 (25/32)                       |                  |
| Gear ratio 4th                 |      | 1.036 (28/29)                       |                  |
| Gear ratio 5th                 |      | 0.839 (31/26)                       |                  |
| Final reduction ratio          |      | 3.091 (34/11)                       |                  |
| Spark plug                     |      |                                     |                  |
| Standard                       |      | X24EPH J9 (ND) or DPR8EA J9 (NGK)   |                  |
| For extended high speed tuning |      | X27EPH J9 (ND) or DPR9FA J9 (NGK)   |                  |
| Spark plug gap                 |      | 0.8 - 0.9 mm (0.031 - 0.035 in)     |                  |
| Fuse                           |      | 30A (Main) 15A (Sub)                |                  |
| Rear turn signal light         |      | 12V 32 cp No. 103                   |                  |
| Meter light                    |      |                                     |                  |
| Neutral indicator              |      |                                     |                  |
| Turn signal indicator          |      | 12V 2 cp No. 155                    |                  |
| High beam indicator            |      |                                     |                  |
| Oil pressure warning light     |      |                                     |                  |



**HONDA**

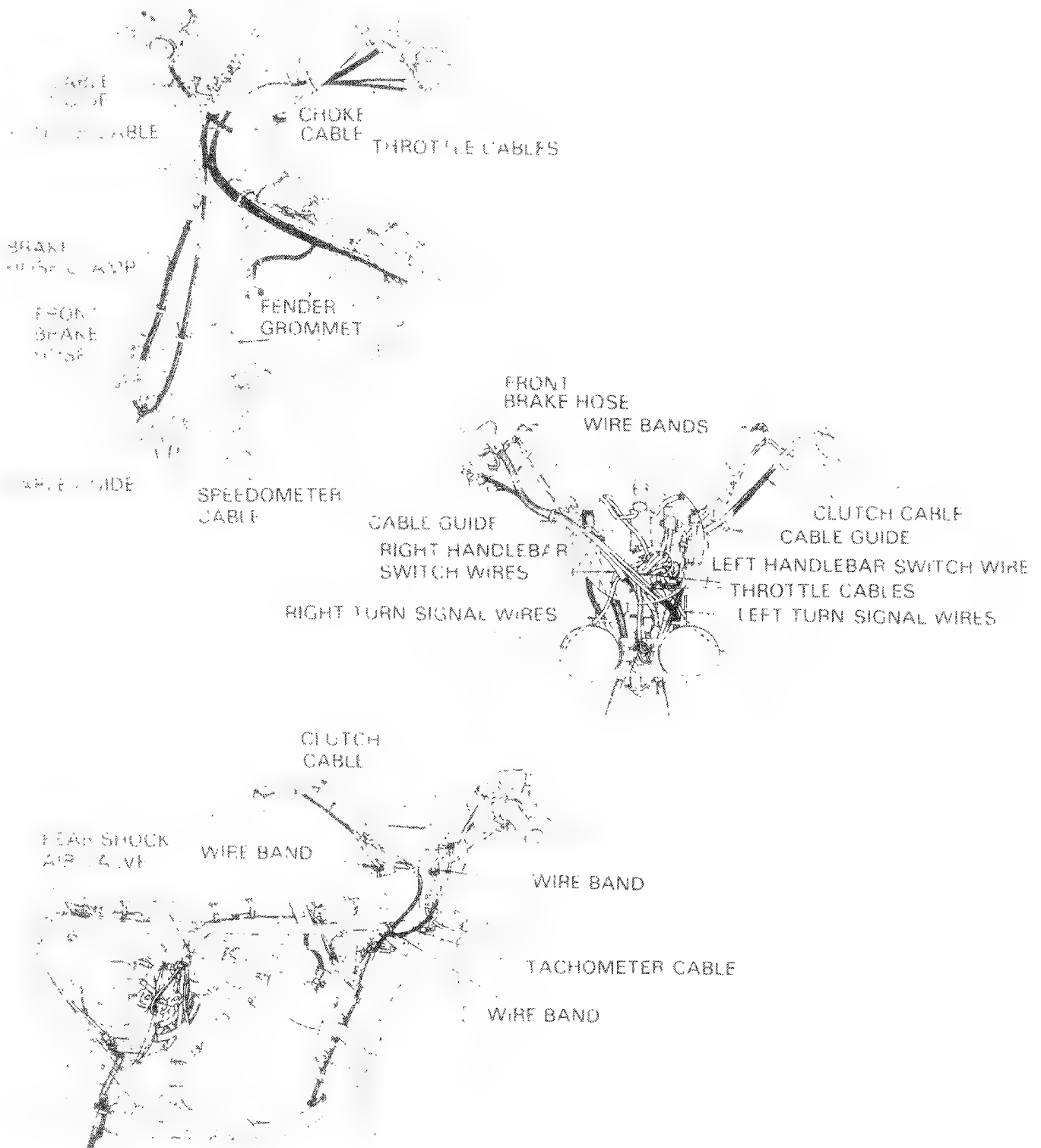
GL650  
GL650 INTERSTATE

'83 ADDENDUM

## CABLE AND HARNESS ROUTING

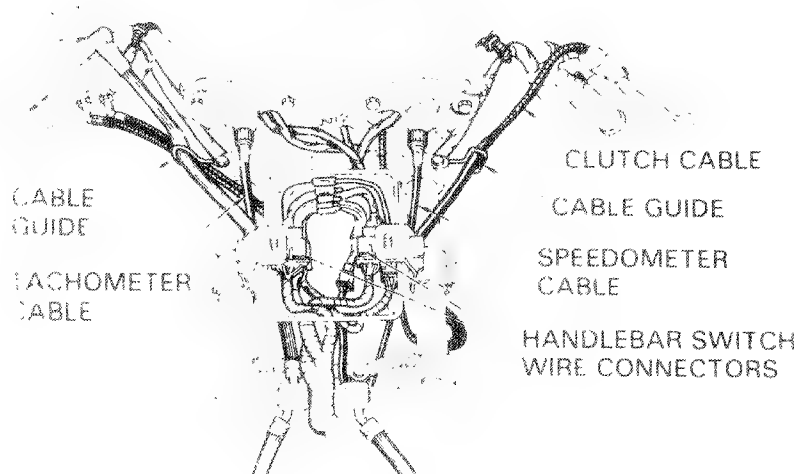
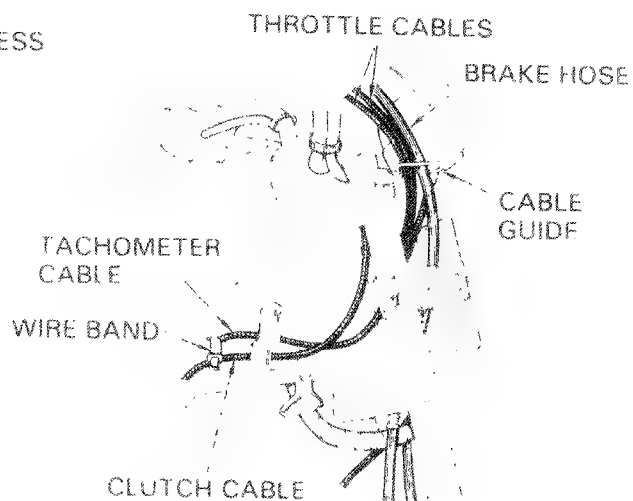
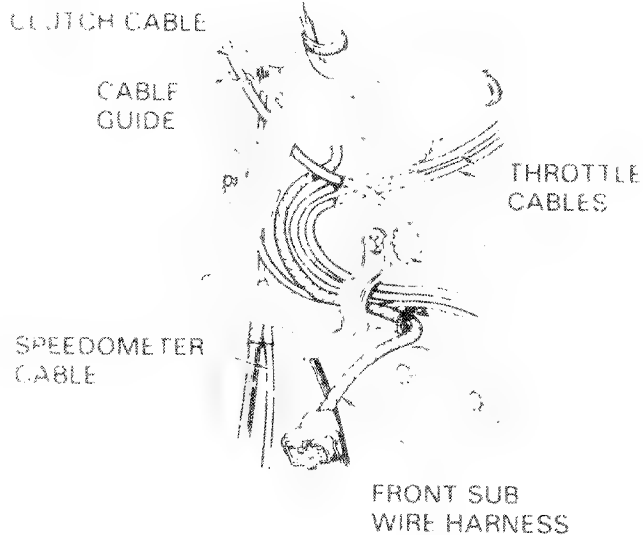
(GL650)

WIRE BANDS





(GL650 INTERSTATE)





**HONDA**GL650  
GL650 INTERSTATE**'83 ADDENDUM****3. SERVICE DATA**

Unit: mm (in.)

| ITEM                             |                                |             | STANDARD                                             | SERVICE LIMIT                         |
|----------------------------------|--------------------------------|-------------|------------------------------------------------------|---------------------------------------|
| Cylinder compression (cold)      |                                |             | 1,200 kpa (1.20 kg/cm <sup>2</sup> , 171 psi)        | _____                                 |
| Rocker arms, shafts, and holders | Rocker arm I.D.                |             | 15.00-15.018 (0.5906-0.5913)                         | 15.04 (0.592)                         |
|                                  | Rocker arm shaft O.D.          |             | 14.966-14.984 (0.5892-0.5899)                        | 14.95 (0.589)                         |
|                                  | Rocker arm holder I.D.         |             | 14.988-15.006 (0.5901-0.5908)                        | 15.03 (0.592)                         |
| Free length                      | Outer (IN)                     |             | 50.40-1.984)                                         | 48.50 (1.909)                         |
|                                  | Inner (IN)                     |             | 50.30-1.980)                                         | 48.40 (1.905)                         |
|                                  | Outer (EX)                     |             | 50.40-1.984)                                         | 48.50 (1.909)                         |
|                                  | Inner (EX)                     |             | 50.30-1.980)                                         | 48.40 (1.905)                         |
|                                  | Outer (IN)                     |             | 28 kg/39.9 mm (61.71 lbs/1.5709 in)                  | 26.5 kg/39.8 mm (58.4 lbs/1.5670 in.) |
| Assembled length                 | Inner (IN)                     |             | 11.5 kg/37.9 mm (25.4 lbs/1.4921 in)                 | 10.5 kg/37.9 mm (23.2 lbs/1.4921 in)  |
|                                  | Outer (EX)                     |             | 28.5 kg/39.9 mm (62.8 lbs/1.5709 in)                 | 26.5 kg/39.8 mm (58.4 lbs/1.5670 in)  |
|                                  | Inner (EX)                     |             | 11.5 kg/37.9 mm (25.4 lbs/1.492 in)                  | 10.5 kg/37.9 mm (23.2 lbs/1.4921 in)  |
|                                  |                                |             |                                                      |                                       |
| Valves and valve guides          | Stem O.D.                      | (IN)        | 6.580-6.590 (0.2591-0.2594)                          | 6.54 (0.258)                          |
|                                  |                                | (EX)        | 6.550-6.560 (0.2579-0.2583)                          | 6.54 (0.258)                          |
|                                  | Guide I.D.                     | (IN)        | 6.600-6.620 (0.2598-0.2606)                          | 6.70 (0.264)                          |
|                                  |                                | (EX)        | 6.600-6.620 (0.2598-0.2606)                          | 6.70 (0.264)                          |
|                                  | Stem to guide clearance        | (IN)        | _____                                                | 0.10 (0.040)                          |
|                                  |                                | (EX)        | _____                                                | 0.10 (0.040)                          |
| Cylinder head                    | Valve seat width               |             | 1.1-1.3 (0.04-0.05)                                  | 2.0 (0.08)                            |
|                                  | Warpage                        |             | _____                                                | 0.10 (0.040)                          |
| Clutch                           | Free play (at lever end)       |             | 10-20 (3.8-3.4)                                      | _____                                 |
|                                  | Clutch spring                  | Free length | 39.40 (1.551)                                        | 38.0 (1.496)                          |
|                                  |                                | Tension     | 23.7-26.3 kg/28.0 mm (52.3-58.0 lbs/1.10 in)         | 22.0 kg/28.0 mm (48.5 lbs/1.10 in)    |
|                                  | Disk thickness                 | A           | 2.62-2.78 (0.103-0.109)                              | 2.3 (0.091)                           |
|                                  |                                | B           | 5.5 (0.14)                                           | 3.1 (0.122)                           |
|                                  | Plate warpage                  | A           | _____                                                | 0.20 (0.008)                          |
|                                  |                                | B           | _____                                                | 0.20 (0.008)                          |
|                                  | Outer guide I.D.               |             | 25.000-25.025 (0.9843-0.9852)                        | 25.07 (0.9870)                        |
|                                  | Outer guide O.D.               |             | 31.987-32.000 (1.2593-1.2598)                        | 31.928 (1.2570)                       |
|                                  | Inner-to-outer rotor clearance |             | _____                                                | 0.15 (0.006)                          |
| Oil pump                         | Outer rotor-to-body clearance  |             | _____                                                | 0.35 (0.014)                          |
|                                  | Rotor-to-body clearance        |             | _____                                                | 0.10 (0.004)                          |
| Oil pressure                     | Relief valve relief pressure   |             | 500-600 kpa (5.0-6.0 kg/cm <sup>2</sup> , 71-85 psi) |                                       |



Unit: mm (in.)

| ITEM                                  |                                      | STANDARD       |                                   | SERVICE LIMIT   |
|---------------------------------------|--------------------------------------|----------------|-----------------------------------|-----------------|
| Crankshaft                            | Crank height                         | IN             | 37.988 (1.4956)                   | 37.0 (1.4567)   |
|                                       |                                      | EX             | 38.143 (1.5017)                   | 37.155 (1.4628) |
| Journal O.D.                          | Front                                |                | 21.959 - 21.980 (0.8645 - 0.8654) | 21.910 (0.8526) |
|                                       | Rear                                 |                | 25.959 - 26.980 (1.0220 - 1.0622) | 25.910 (1.0201) |
| Crankpin and<br>connecting rod shafts | Arm I.D.                             |                | 14.016 - 14.027 (0.5518 - 0.5522) | 14.046 (0.5530) |
|                                       | Shaft O.D.                           |                | 13.982 - 14.000 (0.5505 - 0.5512) | 13.966 (0.5510) |
|                                       | Crankshaft holder I.D.               |                | 22.000 - 22.021 (0.8661 - 0.8670) | 22.050 (0.8681) |
|                                       | Crankshaft bearing I.D.              |                | 26.000 - 26.021 (1.0236 - 1.0244) | 26.170 (1.0303) |
| Gear assembly                         | M4 and M5 gear I.D.                  |                | 29.020 - 29.041 (1.1425 - 1.1433) | 29.10 (1.1457)  |
|                                       | C1 gear I.D.                         |                | 24.020 - 24.041 (0.9457 - 0.9465) | 24.10 (0.949)   |
|                                       | C2 gear I.D.                         |                | 31.025 - 31.050 (1.2215 - 1.2224) | 31.109 (1.2248) |
|                                       | C3 gear I.D.                         |                | 29.020 - 29.041 (1.1425 - 1.1433) | 29.10 (1.1457)  |
|                                       | C1 gear bushing I.D.                 |                | 24.985 - 25.006 (0.9837 - 0.9845) | 25.025 (0.9852) |
|                                       | C1 gear bushing O.D.                 |                | 28.979 - 29.000 (1.1409 - 1.1417) | 28.945 (1.1396) |
|                                       | Mainshaft O.D. and Countershaft O.D. | See page 24-29 |                                   |                 |
|                                       | Gear to bushing clearance            |                |                                   | 0.15 (0.006)    |
|                                       | Shaft O.D.                           | O.D.           | 34.950 - 34.975 (1.3760 - 1.3770) | 34.90 (1.374)   |
|                                       |                                      | I.D.           | 35.000 - 35.025 (1.3780 - 1.3789) | 35.06 (1.380)   |
| Clutch fork                           | Claw thickness                       |                | 5.930 - 6.000 (0.233 - 0.236)     | 5.50 (0.217)    |
|                                       | I.D.                                 |                | 13.000 - 13.018 (0.5118 - 0.5125) | 13.05 (0.514)   |
| Counter shaft                         | O.D.                                 |                | 12.966 - 12.984 (0.5105 - 0.5112) | 12.95 (0.510)   |
| Free shaft<br>(input)                 | Free length                          |                | 73.0 (2.87)                       | 72.0 (2.83)     |
| Crankshaft                            | Main journal oil clearance           |                | 0.020 - 0.060 (0.0008 - 0.0023)   | 0.085 (0.0033)  |
|                                       | Crankpin oil clearance               |                | 0.020 - 0.044 (0.0008 - 0.0017)   | 0.080 (0.0031)  |
|                                       | Connecting rod side clearance        |                | 0.150 - 0.170 (0.0059 - 0.0067)   | 0.350 (0.0138)  |
| Cylinder                              | I.D.                                 |                | 82.500 - 82.515 (3.2480 - 3.2486) | 82.600 (3.2520) |
|                                       | Warpage                              |                |                                   | 0.10 (0.004)    |
| Piston ring                           | Ring to groove clearance             | Top            | 0.015 - 0.050 (0.0006 - 0.0020)   | 0.10 (0.004)    |
|                                       |                                      | Second         | 0.015 - 0.050 (0.0006 - 0.0020)   | 0.10 (0.004)    |
|                                       | Ring end gap                         | Top            | 0.10 - 0.25 (0.004 - 0.010)       | 0.60 (0.024)    |
|                                       |                                      | Second         | 0.10 - 0.25 (0.004 - 0.010)       | 0.60 (0.024)    |
|                                       |                                      | Oil side rail  | 0.3 - 0.9 (0.012 - 0.035)         | 1.1 (0.04)      |
| Piston<br>Piston pin                  | Piston O.D.                          |                | 82.460 - 82.485 (3.2465 - 3.2474) | 82.38 (3.2433)  |
|                                       | Piston pin bore                      |                | 21.002 - 21.008 (0.8268 - 0.8271) | 21.040 (0.8283) |
|                                       | Piston pin I.D.                      |                | 20.994 - 21.000 (0.8265 - 0.8268) | 20.984 (0.8261) |
|                                       | Small end I.D.                       |                | 21.020 - 21.041 (0.8276 - 0.8284) | 21.068 (0.8284) |
|                                       | Piston to cylinder clearance         |                |                                   | 0.10 (0.004)    |

**HONDA**GL650  
GL650 INTERSTATE**'83 ADDENDUM**

Unit: mm (in.)

| ITEM                                |                         | STANDARD                                                      | SERVICE LIMIT   |
|-------------------------------------|-------------------------|---------------------------------------------------------------|-----------------|
| Axle shaft runout (front)           |                         |                                                               | 0.20 (0.008)    |
| Front wheel rim runout              | Radial                  |                                                               | 2.0 (0.08)      |
|                                     | Axial                   |                                                               | 2.0 (0.08)      |
| Front fork spring free length       | Upper                   | 123.6 (4.87)                                                  | 120.6 (4.75)    |
|                                     | Lower                   | 466.9 (18.38)                                                 | 451.8 (17.79)   |
| Front fork tube runout              |                         |                                                               | 0.20 (0.008)    |
| Front fork oil capacity             |                         | 275 cc (9.3 oz)                                               |                 |
| Fork air pressure                   |                         | 40 - 120 kpa (0.4 - 1.2 kg/cm <sup>2</sup><br>5.5 - 17 psi)   |                 |
| Axle runout (rear)                  |                         |                                                               | 0.2 (0.008)     |
| Rear wheel runout                   | Radial                  |                                                               | 2.0 (0.08)      |
|                                     | Axial                   |                                                               | 2.0 (0.08)      |
| Brake lining thickness              |                         | 4.9 - 5.0 (0.19 - 0.20)                                       | 2.0 (0.08)      |
| Rear brake drum I.D.                |                         | 160.0 (6.30)                                                  | 161.6 (6.34)    |
| Front axle                          | Backlash                | 0.08 - 0.18 (0.003 - 0.007)                                   | 0.25 (0.010)    |
|                                     | Backlash difference     |                                                               | 0.10 (0.004)    |
|                                     | Pinion gear preload     | 0.4 - 0.5 N·m (4.0 - 5.0 kg·cm,<br>3.48 - 4.32 in·lb)         |                 |
|                                     | Assembly preload        | 0.6 - 0.9 N·m (6.0 - 9.0 kg·cm,<br>5.16 - 7.80 in·lb)         |                 |
|                                     | Final gear oil capacity | 160 - 180 cc (5.4 - 6.1 oz)                                   |                 |
| Rear shock absorber oil capacity    |                         | 669 cc (22.6 oz)                                              |                 |
| Rear shock absorber<br>air pressure | GL650                   | 0 - 500 kpa (0 - 5.0 kg/cm <sup>2</sup> , 0 - 70 psi)         |                 |
|                                     | GL650I                  | 100 - 500 kpa (1.0 - 5.0 kg/cm <sup>2</sup> ,<br>14 - 70 psi) |                 |
| Disc thickness                      | GL650                   | 6.9 - 7.1 (0.27 - 0.28)                                       | 6.0 (0.24)      |
|                                     | GL650I                  | 4.9 - 5.1 (0.19 - 0.20)                                       | 4.0 (0.16)      |
| Disc runout                         |                         |                                                               | 0.3 (0.01)      |
| Master cylinder I.D.                | GL650                   | 15.870 - 15.913 (0.6248 - 0.6265)                             | 15.925 (0.6270) |
|                                     | GL650I                  | 14.000 - 14.043 (0.5512 - 0.5529)                             | 14.055 (0.5533) |
| Master piston O.D.                  | GL650                   | 15.827 - 15.854 (0.6231 - 0.6242)                             | 15.815 (0.6226) |
|                                     | GL650I                  | 13.957 - 13.984 (0.5495 - 0.5506)                             | 13.945 (0.5490) |
| Caliper piston O.D.                 |                         | 30.148 - 30.198 (1.1869 - 1.1889)                             | 30.140 (1.1866) |
| Caliper cylinder I.D.               |                         | 30.230 - 30.280 (1.1901 - 1.1921)                             | 30.290 (1.1925) |
| Starter motor                       | Brush spring tension    | 0.495 - 0.605 kg                                              | 400 kg          |
|                                     | Brush length            | 11.0 - 12.5 (0.43 - 0.49)                                     | 5.5 (0.21)      |



## 4. LUBRICATION

### OIL STRAINER CLEANING

Drain the engine oil.

Remove the oil pan by removing the eight bolts.

#### NOTE

Loosen the bolts in an X pattern in two or more steps.

Remove the oil strainer from the engine case.

Clean the oil strainer screen and oil pan thoroughly.

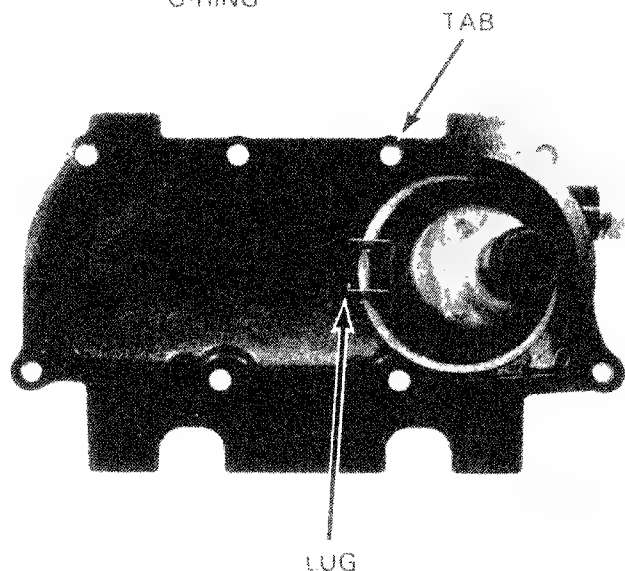
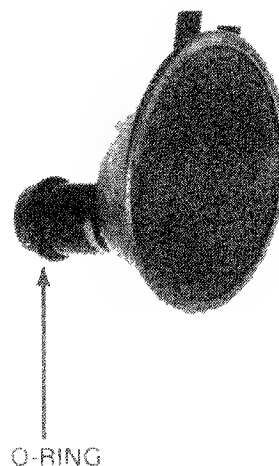
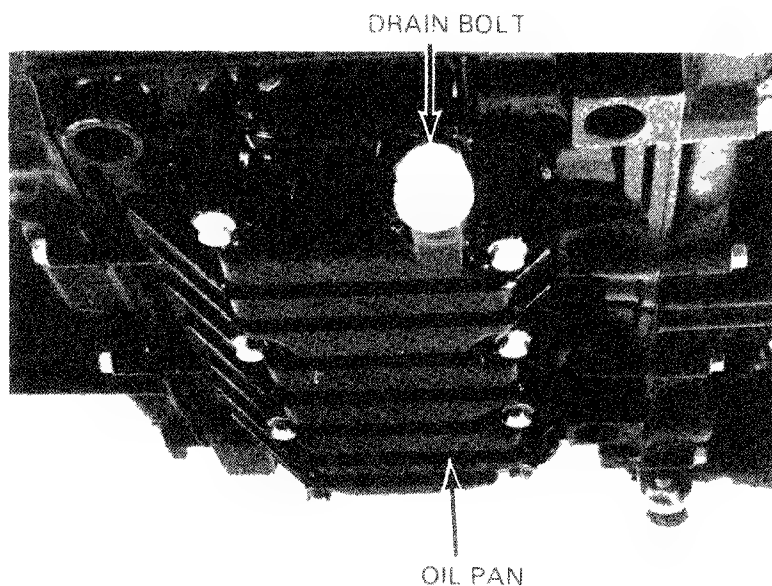
Inspect the O-ring for damage or deterioration. Replace if necessary.

Install the strainer in the oil pan.

#### NOTE

Align the tabs of the strainer body with the lug in the oil pan.

Install the oil pan on the engine case, inserting the end of the strainer into the oil pump inlet.



**HONDA**GL650  
GL650 INTERSTATE

'83 ADDENDUM

## 5. MAINTENANCE

### MAINTENANCE SCHEDULE

Examine the Periodic Inspection with the Owner's Manual at each scheduled maintenance period.

I INSPECT AND CLEAN, ADJUST, LUBRICATE, OR REPLACE IF NECESSARY

C CLEAN

R REPLACE

A ADJUST

L LUBRICATE

| ITEM                                   | FREQUENCY                      | WHICHEVER<br>COMES<br>FIRST<br>↓<br>EVERY | ODOMETER READING (NOTE 3) |                      |                       |                        |                        |                        |                        |      | Refer to<br>page |
|----------------------------------------|--------------------------------|-------------------------------------------|---------------------------|----------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|------|------------------|
|                                        |                                |                                           | 600mi<br>(1,000km)        | 4,000mi<br>(6,400km) | 8,000mi<br>(12,800km) | 12,000mi<br>(19,200km) | 16,000mi<br>(25,600km) | 20,000mi<br>(32,000km) | 24,000mi<br>(38,400km) |      |                  |
| EMISSION RELATED ITEMS                 |                                |                                           |                           |                      |                       |                        |                        |                        |                        |      |                  |
| FUEL LINES                             |                                |                                           |                           |                      |                       |                        |                        |                        |                        | 3-4  |                  |
| FUEL STRAINER                          |                                |                                           | C                         | C                    | C                     | C                      | C                      | C                      | C                      | 23-6 |                  |
| THROTTLE OPERATION                     |                                |                                           |                           |                      |                       |                        |                        |                        |                        | 3-4  |                  |
| CARBURETOR CHOKE                       |                                |                                           |                           |                      |                       |                        |                        |                        |                        | 3-5  |                  |
| AIR CLEANER                            | NOTE 1<br>NOTE 2               |                                           |                           | C                    | R                     | C                      | R                      | C                      | R                      | 3-5  |                  |
| CRANKCASE BREATHER                     |                                |                                           |                           | C                    | C                     | C                      | C                      | C                      | C                      | 3-6  |                  |
| SPARK PLUGS                            |                                |                                           |                           | R                    | R                     | R                      | R                      | R                      | R                      | 23-7 |                  |
| VALVE CLEARANCE                        |                                |                                           |                           | I                    | I                     | I                      | I                      | I                      | I                      | 3-7  |                  |
| ENGINE OIL                             | YEAR<br>YEAR                   |                                           | R                         |                      | R                     |                        | R                      |                        | R                      | 2-2  |                  |
| ENGINE OIL FILTER                      |                                |                                           | R                         |                      | R                     |                        | R                      |                        | R                      | 2-2  |                  |
| CARBURETOR SYNCHRONIZE                 |                                |                                           |                           |                      |                       |                        |                        |                        |                        | 3-9  |                  |
| CARBURETOR IDLE SPEED                  |                                |                                           |                           |                      |                       |                        |                        |                        |                        | 3-10 |                  |
| RADIATOR COOLANT                       |                                |                                           |                           |                      |                       |                        |                        |                        | *R                     | 3-10 |                  |
| RADIATOR CORE                          |                                |                                           |                           |                      |                       |                        |                        |                        | I                      | 3-10 |                  |
| COOLING SYSTEM, HOSES<br>& CONNECTIONS |                                |                                           |                           |                      |                       |                        |                        |                        |                        | 3-11 |                  |
| DRIVESHAFT JOINT                       |                                |                                           |                           |                      | L                     |                        | L                      |                        | L                      | 2-3  |                  |
| FINAL DRIVE OIL                        |                                |                                           |                           |                      |                       |                        |                        |                        | R                      | 2-3  |                  |
| BATTERY                                | MONTH<br>MONTH 1<br>2 YEARS *R |                                           | I                         | I                    | I                     | I                      | I                      | I                      | I                      | 3-11 |                  |
| BRAKE FLUID (FRONT)                    |                                |                                           | I                         | I                    | I                     | I                      | I                      | I                      | *R                     | 3-11 |                  |
| BRAKE SHOE PAD WEAR                    |                                |                                           |                           | I                    | I                     | I                      | I                      | I                      | I                      | 3-12 |                  |
| BRAKE SYSTEM (REAR)                    |                                |                                           |                           | I                    |                       | I                      |                        | I                      |                        | 3-12 |                  |
| BRAKE LIGHT SWITCH                     |                                |                                           |                           | I                    |                       |                        | I                      |                        | I                      | 3-13 |                  |
| HEADLIGHT AIM                          |                                |                                           |                           | I                    |                       | I                      |                        | I                      |                        | 3-13 |                  |
| CLUTCH                                 |                                |                                           |                           | I                    | I                     | I                      | I                      | I                      | I                      | 3-14 |                  |
| SIDE STAND                             |                                |                                           |                           |                      | I                     |                        | I                      |                        | I                      | 3-14 |                  |
| SUSPENSION                             |                                |                                           |                           | I                    |                       | I                      |                        | I                      |                        | 3-15 |                  |
| NUTS, BOLTS, FASTENERS                 |                                |                                           |                           | I                    |                       | I                      |                        | I                      |                        | 3-16 |                  |
| WHEELS                                 |                                |                                           |                           | I                    |                       | I                      |                        | I                      |                        | 3-16 |                  |
| STEERING HEAD BEARING                  |                                |                                           |                           | I                    |                       | I                      |                        | I                      |                        | 3-17 |                  |
| NON-EMISSION RELATED ITEMS             |                                |                                           |                           |                      |                       |                        |                        |                        |                        |      |                  |

\*SHOULD BE SERVICED BY AN AUTHORIZED HONDA DEALER, UNLESS THE OWNER HAS PROPER TOOLS AND SERVICE DATA AND IS MECHANICALLY QUALIFIED.

\*\*IN THE INTEREST OF SAFETY, WE RECOMMEND THESE ITEMS BE SERVICED ONLY BY AN AUTHORIZED HONDA DEALER.

NOTES: 1. Service more frequently when riding in dusty areas.

2. Service more frequently when riding in rain or at full throttle, or after the motorcycle has been washed or overturned.

3. For higher odometer readings, repeat at the frequency interval established here.



## 6. FUEL SYSTEM

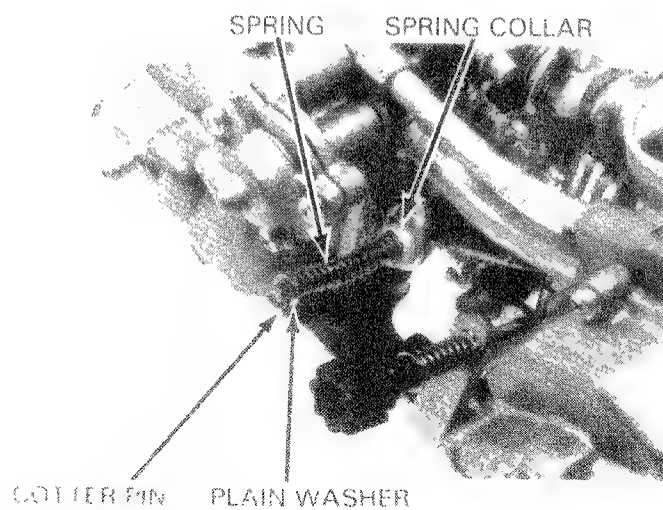
### SPECIFICATIONS

|                        |                 |
|------------------------|-----------------|
| Venturi diameter       | 35 mm (1.4 in.) |
| Jet                    | Vb 2 AA         |
| Throttle cable         | 11.5 in.        |
| Throttle cable         | 0.5 in.         |
| Throttle cable opening | 2               |
| Throttle cable         | 1.00-1.00 in.   |
| Throttle cable         | 4.00 in.        |
| Throttle cable         | 6.00 in.        |
| Throttle cable         | 2.00 in.        |
| Throttle cable         | 2.00 in.        |
| Throttle cable         | 2.00 in.        |

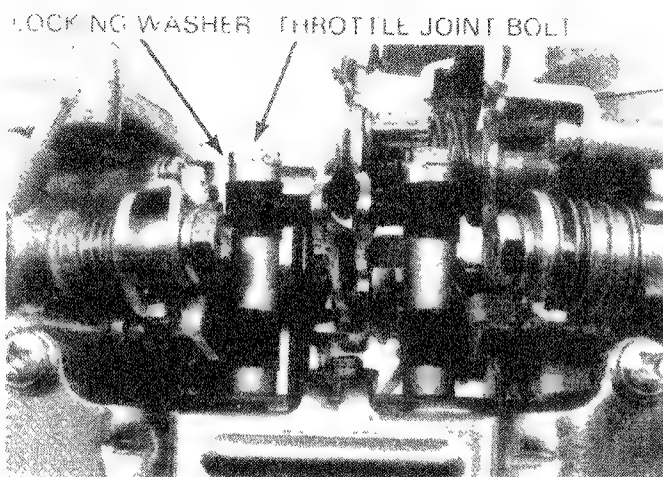
### CARBURETOR SEPARATION

Remove the cotter pin from the accelerator pump rod.

Remove the plain washer, spring and spring collar.



Remove the lock washer and the locking washer.





**HONDA**

GL650

GL650 INTERSTATE

'83 ADDENDUM

### Remove the throttle cable

Remove the locking washer and ball joint rod.

Disconnect the ball joint of the throttle link from the throttle joint pipe.

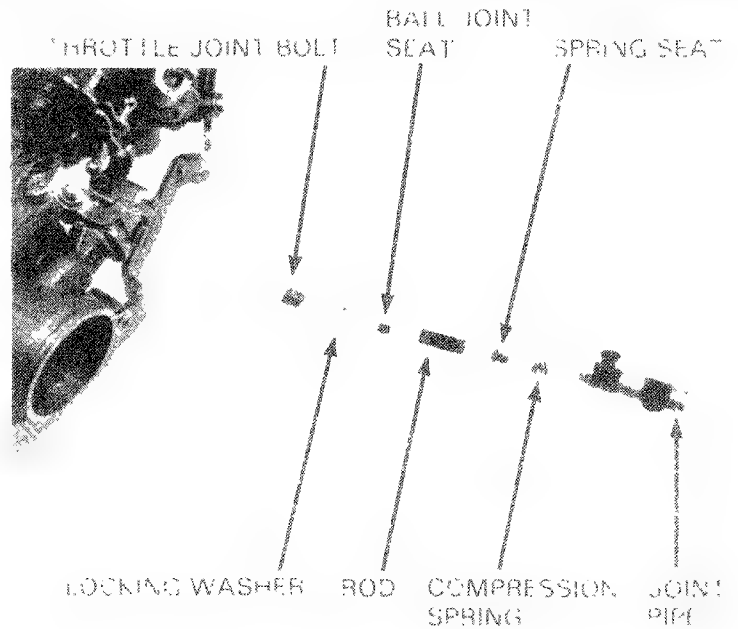
Remove the rod.

Disconnect the throttle joint pipe from the throttle cable return throttle linkage.

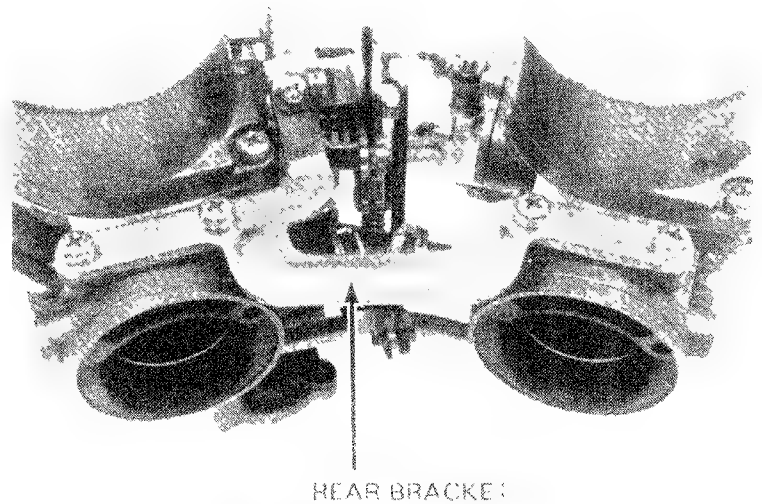
Note and part location to insure original assembly.

### NOTE

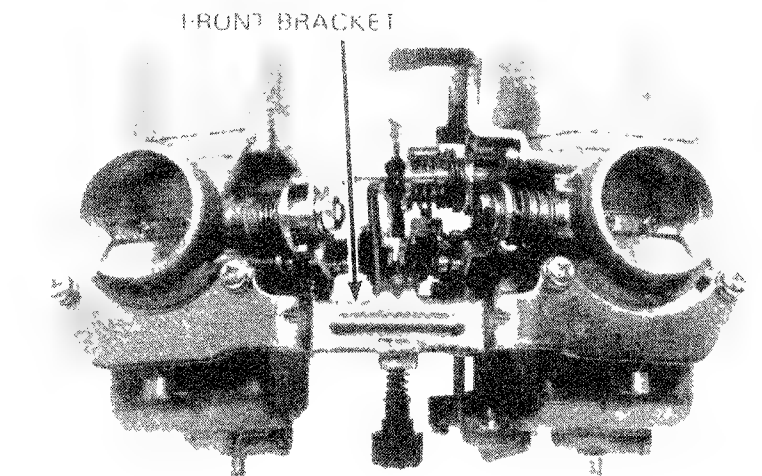
For easy removal, hold the joint pipe against the throttle link.



### Remove the rear bracket



### Remove the front bracket



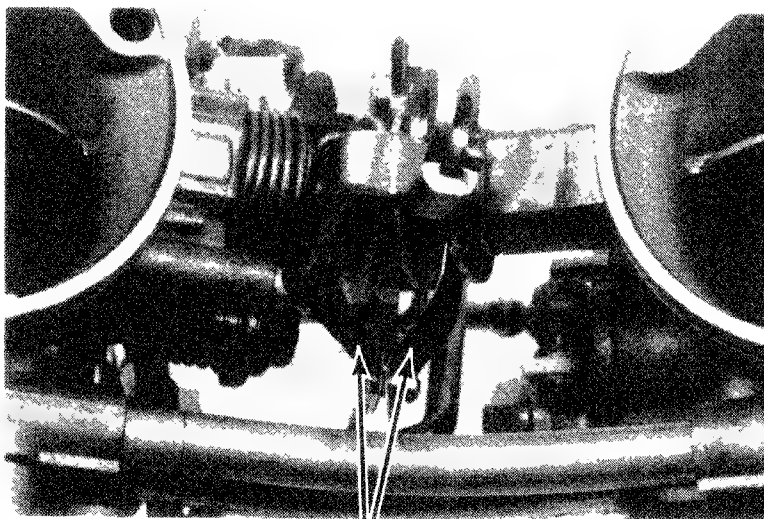


Finally separate the carburetors.

**CAUTION:**

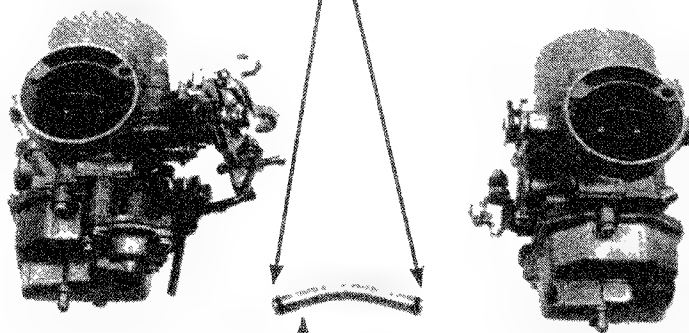
*Separate the carburetor horizontally to prevent damage to the fuel and air inlet pipes and choke links. Then, tilt the right carburetor assembly to clear the accelerator pump rod.*

*Do not bend the accelerator pump rod.*



CHOKE LINKS

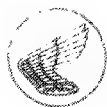
O RINGS



O RING FUEL JOINT O RING  
PIPES

Using compressed air, blow through the air and fuel passages to make sure they're clear.





## CARBURETOR ASSEMBLY

The assembly sequence is essentially the reverse order of separation.

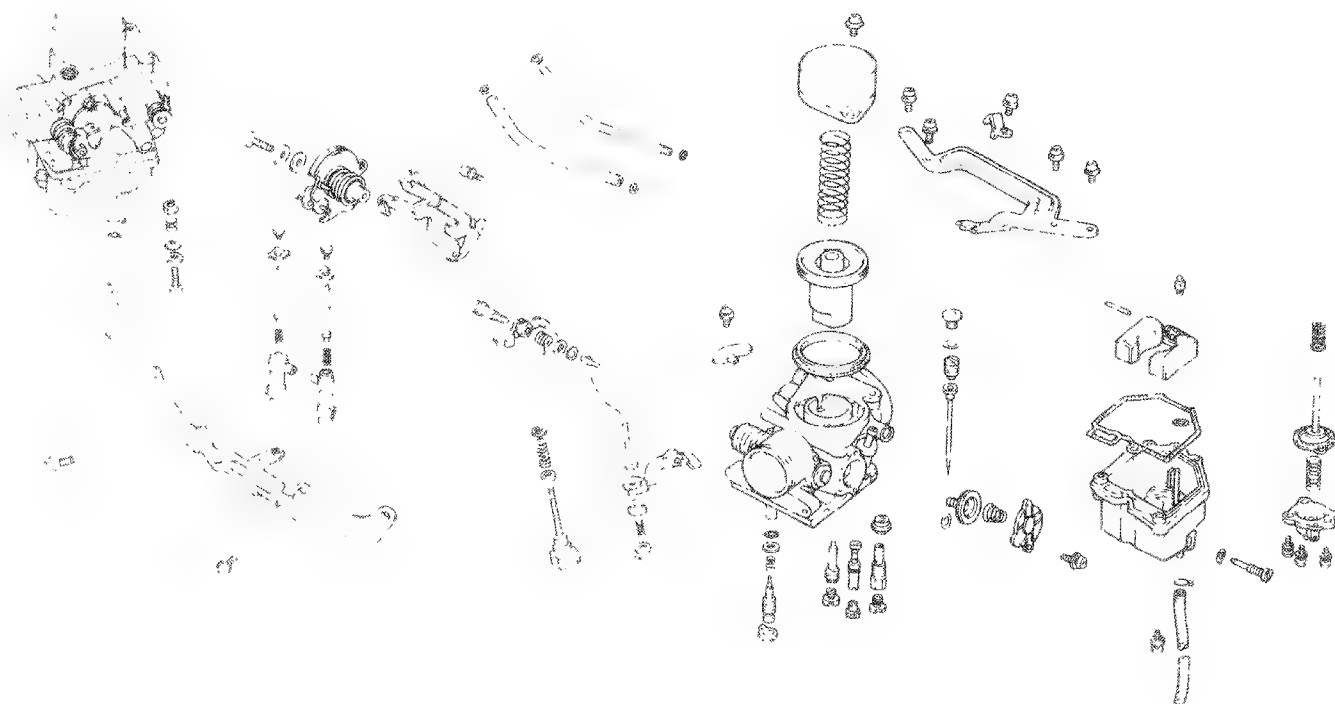
### NOTE

Apply a thin coating of oil to the fuel jet.

Torque:

Fuel pipe joint, 2.8 - 4.2 N·m  
0.28 - 0.42 kg·m, 2 - 3 ft·lb

Front and rear bracket, 2.8 - 4.2 N·m  
0.28 - 0.42 kg·m, 2 - 3 ft·lb



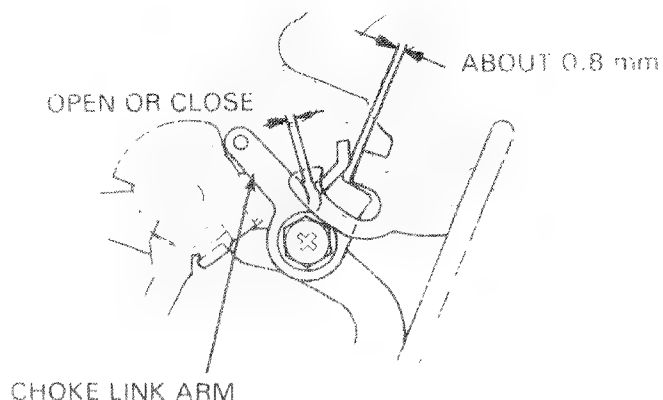


## FAST IDLE ADJUSTMENT

**FAST IDLE:** 1,500 – 2,500 rpm

If fast idle adjustment is necessary, open the carburetors. Then unscrew the throttle stop screw until the throttle valve is completely closed.

Adjust by opening or closing the fork end of the choke link arm until the clearance between the choke link arm and the throttle drum is about 0.8 mm (0.047 in).



## ACCELERATOR PUMP ADJUSTMENT

Loosen the throttle stop screw, until the throttle valve is completely closed.

Measure the clearance between the accelerator pump rod and the choke link arm with the throttle valve closed.

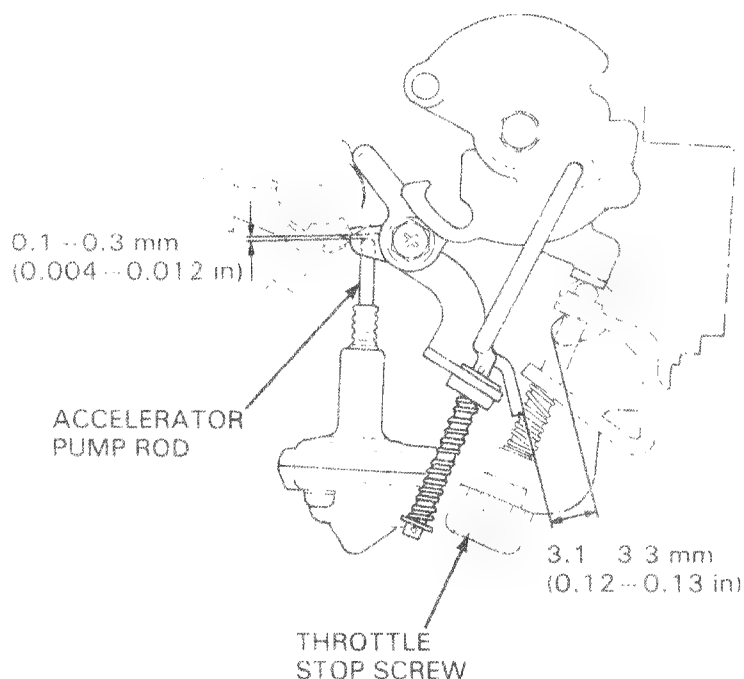
**CLEARANCE:** 0.1 – 0.3 mm  
(0.004 – 0.012 in)

Adjust by bending the choke link arm.

Measure the clearance between the choke link arm and stopper on the carburetor.

**CLEARANCE:** 3.1 – 3.3 mm  
(0.12 – 0.13 in)

Adjust by bending the choke link arm.



## HIGH ALTITUDE ADJUSTMENT (USA ONLY)

When the vehicle is to be operated continuously above 6,500 ft (2,000 m) the carburetors must be readjusted as described below to improve driveability and decrease exhaust emissions.

1. Warm up the engine to operating temperature. Stop and go driving for 10 minutes is sufficient.
2. Turn each pilot screw clockwise 1/2 turn.
3. Adjust the idle speed to 1,100 ± 100 rpm with the throttle stop screw.

### NOTE

These adjustments must be made at high altitude to ensure proper high altitude operation.



**HONDA**

GL650  
GL650 INTERSTATE

'83 ADDENDUM

4. Attach the Vehicle Emission Control Information update label as shown. Refer to service Bulletin SL#132 for information on obtaining the label.

**NOTE**

Do not attach the label to any part that can be easily removed from the vehicle.

**WARNING**

*Operation at an altitude lower than 5,000 ft (1,500 m) with the carburetors adjusted for high altitudes may cause the engine to idle roughly and stall.*

*When the vehicle is to be operated continuously below 5,000 ft (1,500 m) turn each pilot screw counterclockwise to its original position against its stop and adjust the idle speed to  $1,100 \pm 100$  rpm. Be sure to do these adjustments at low altitude.*

## AIR CLEANER CASE REMOVAL

Remove the battery, then remove the 6 mm battery bracket bolt.

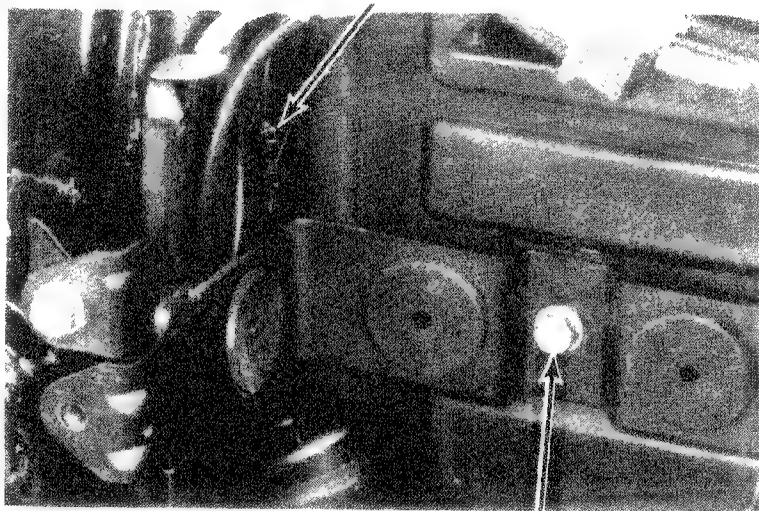
Loosen the seal band screw.

Loosen the intake band (air cleaner side) screws.

VEHICLE EMISSION CONTROL  
INFORMATION UPDATE LABEL

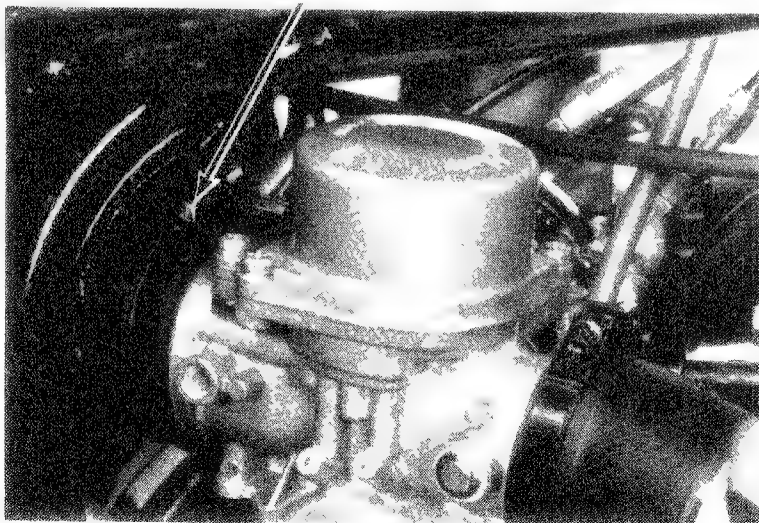


SEAL BAND SCREW



INTAKE TUBE  
BAND SCREW

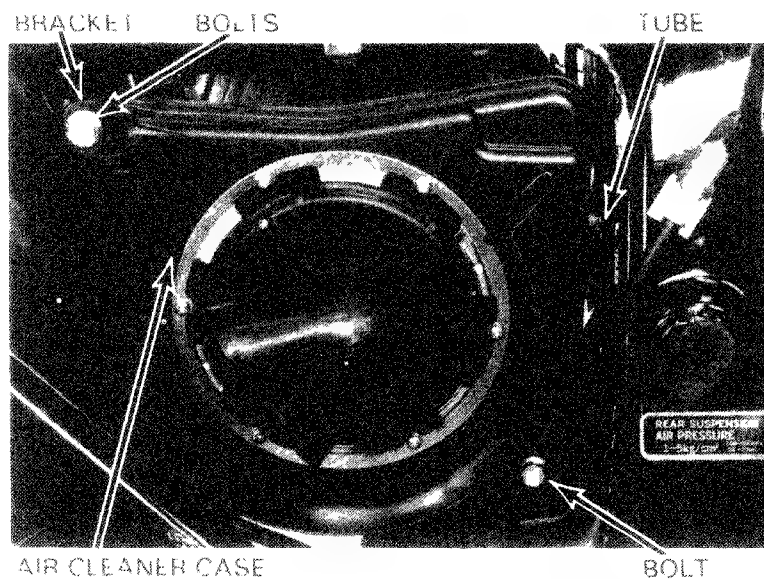
6mm BOLT





Remove the three 6 mm bolts and air cleaner case bracket.

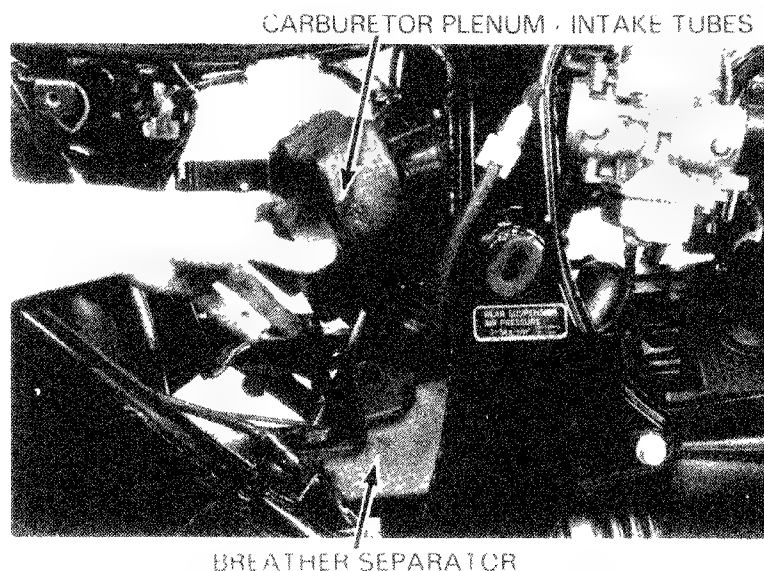
Disconnect the breather separator tube from the air cleaner case and remove the air cleaner case from the right side.



Disconnect the breather tube and drain line from the breather separator.

Remove the breather separator.

Remove the carburetor plenum intake tubes.

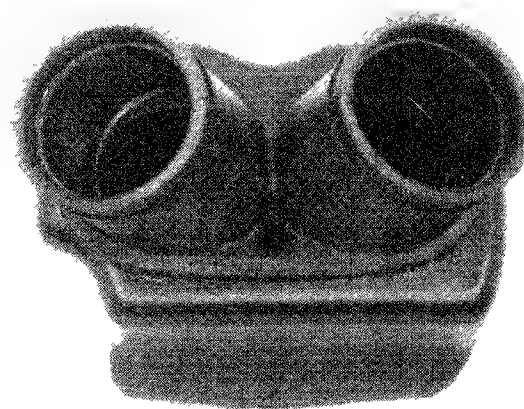


### AIR CLEANER CASE INSTALLATION

Installation of the air cleaner case is essentially the reverse order of removal.

### NOTE

If you must separate the plenum or filter from the air cleaner, apply a sealant when you reassemble. The arrow on the carburetor intake tubes must point down.

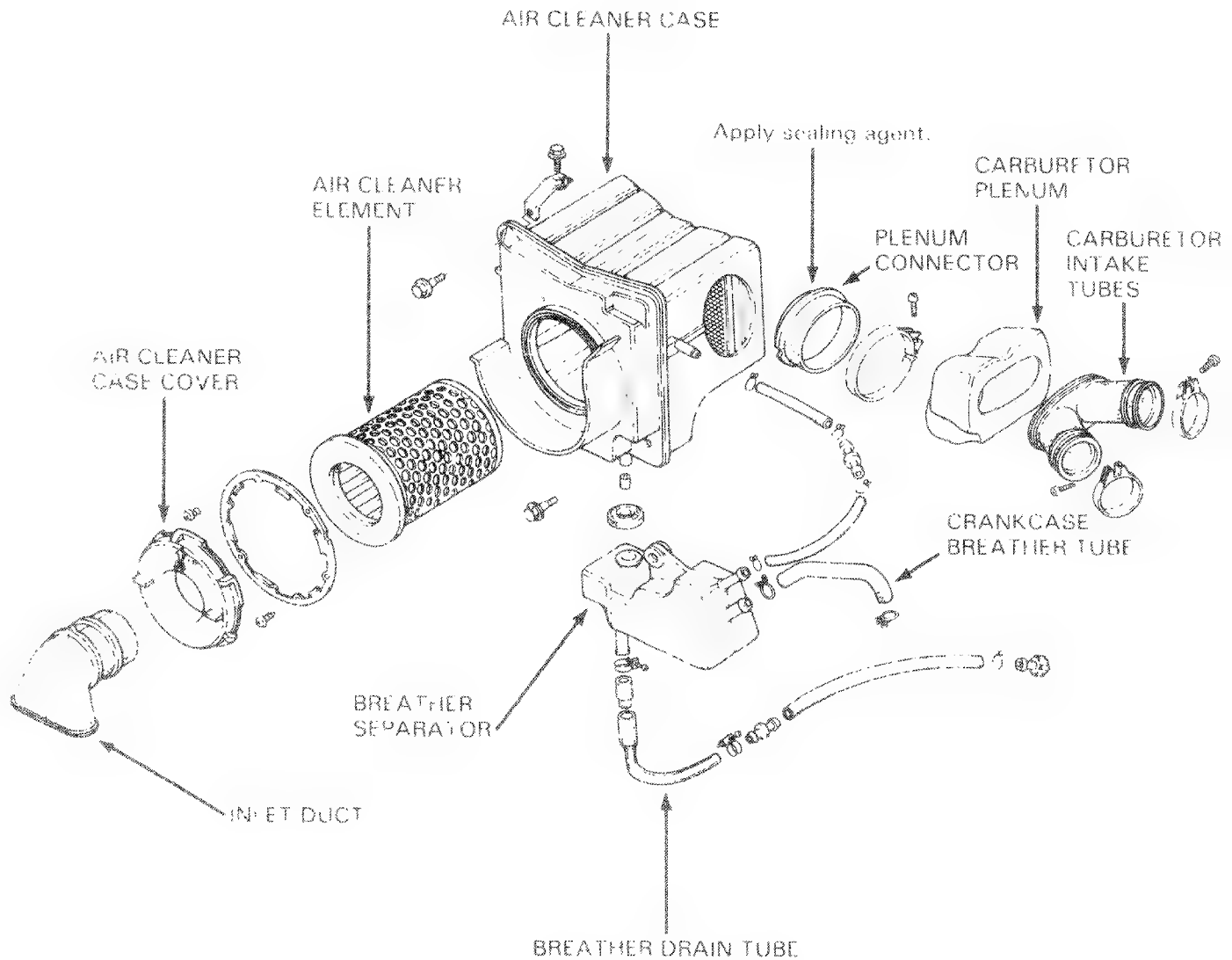




**HONDA**

GL650  
GL650 INTERSTATE

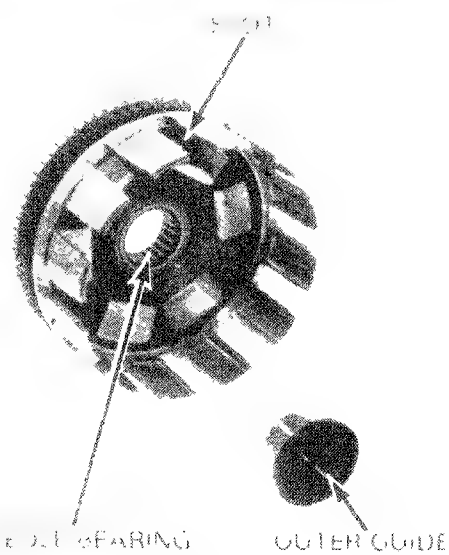
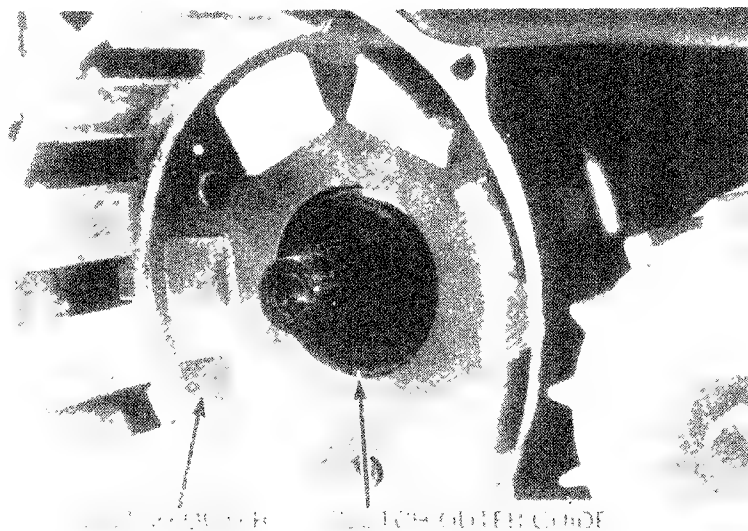
'83 ADDENDUM





## 7 CLUTCH/OIL PUMP

### CLUTCH OUTER REPLACEMENT AND INSPECTION





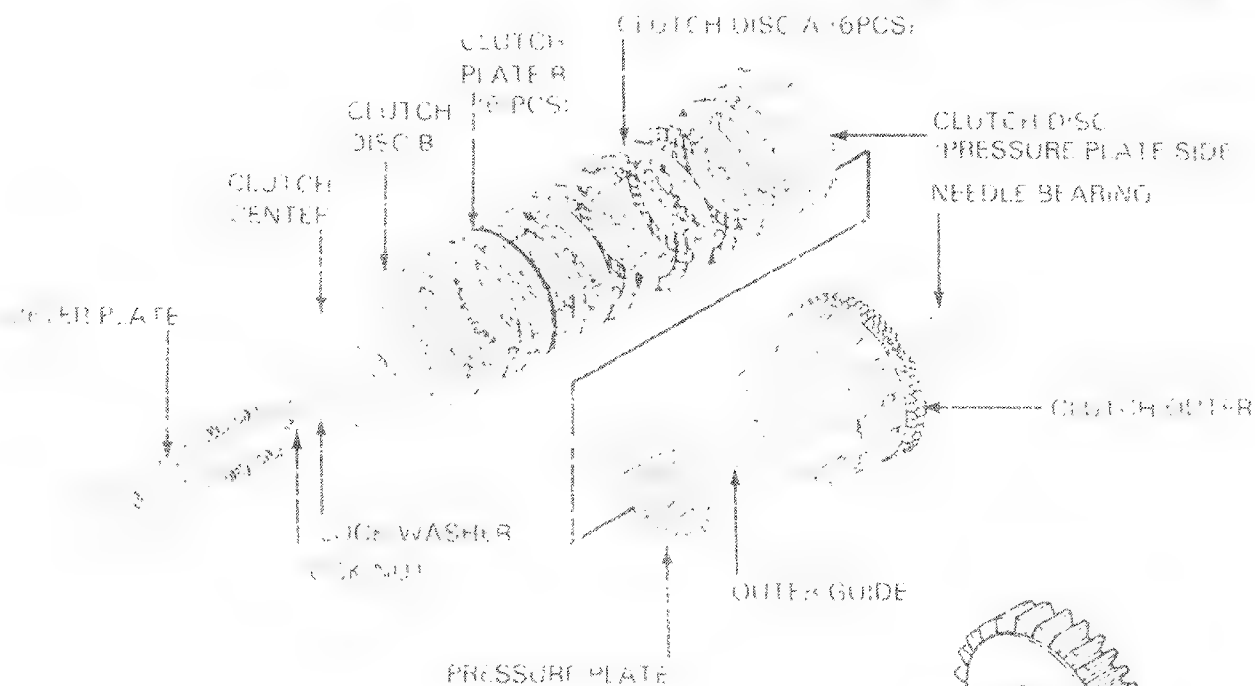
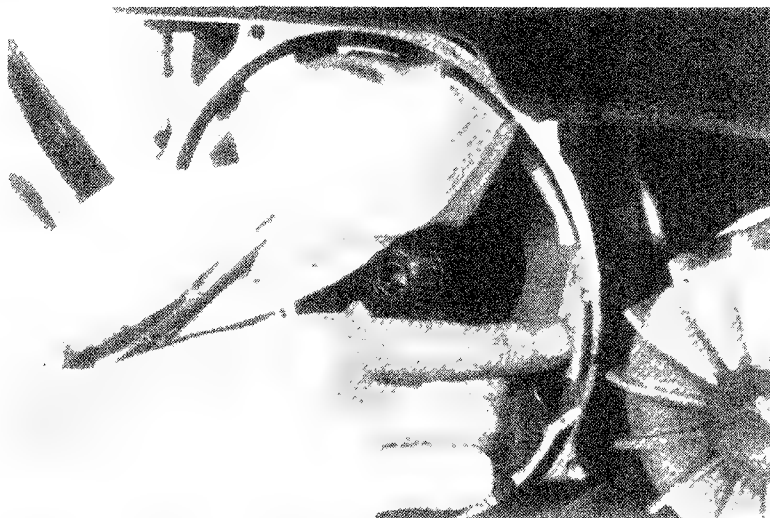
# HONDA

GL650  
GL650 INTERSTATE

'83 ADDENDUM

to the shaft in the sub gear and  
check for wear.

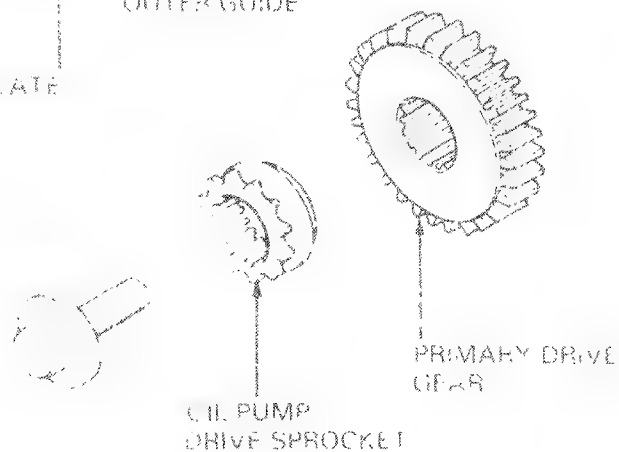
See the clutch order in essentially  
the same order as follows:



## PRIMARY DRIVE GEAR REPLACEMENT

NOTE:

Use the GEAR HOLDER (G7924  
MG7000C) to hold the primary drive  
gear while you tighten its bolt.





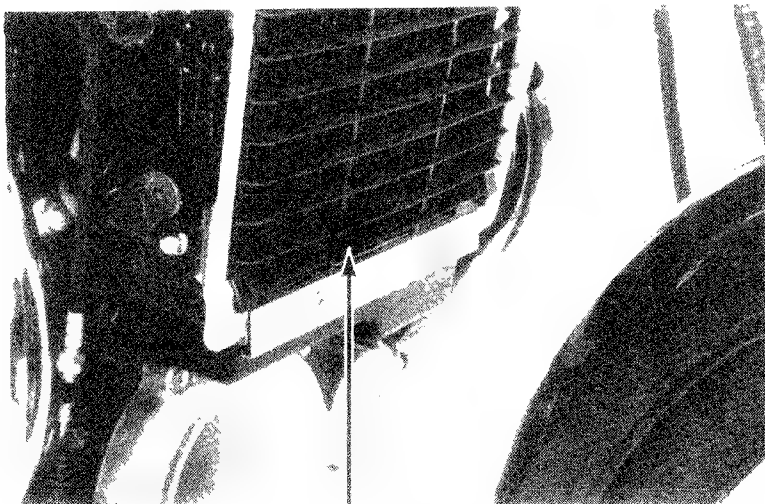


## 8. COOLING SYSTEM RADIATOR/COOLING FAN REMOVAL

21. For Interstate models, remove the grill.

22. Remove the fuel and fuel tank.

23. Remove the radiator grille and drain the coolant from the radiator.

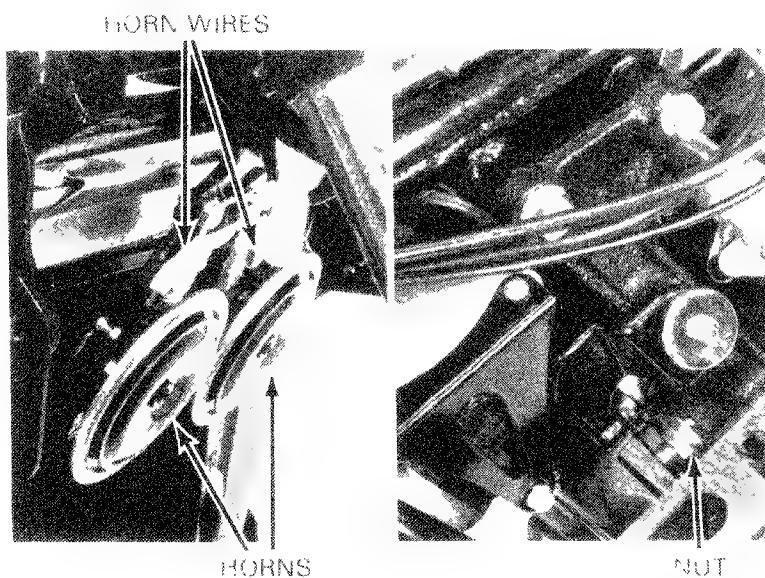


RADIATOR GRILLE

24. For Interstate models, remove the horn brackets.

25. Disconnect the horn wires, remove the wiring, bolts, and remove the horns and bracket.

26. Remove the left side main bracket mounting nuts.



HORN WIRES

HORNS

NUT

27. Remove the wire band, clutch cable and tachometer cable.

28. Remove the right side main bracket mounting nuts.

29. Remove the main bracket.



WIRE BAND

MAIN BRACKET

CLUTCH CABLE

TACHOMETER CABLE





**HONDA**

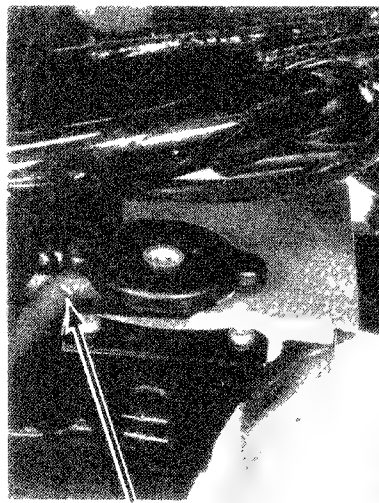
GL650

GL650 INTERSTATE

'83 ADDENDUM

3. Disconnect the overflow tube at the radiator filler neck.

4. Disconnect the fan motor and the thermostat switch wire coupler from the wire harness.



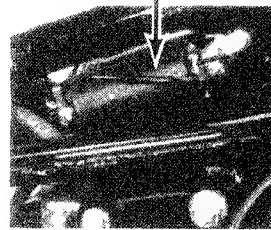
OVERFLOW TUBE

IGNITION COIL

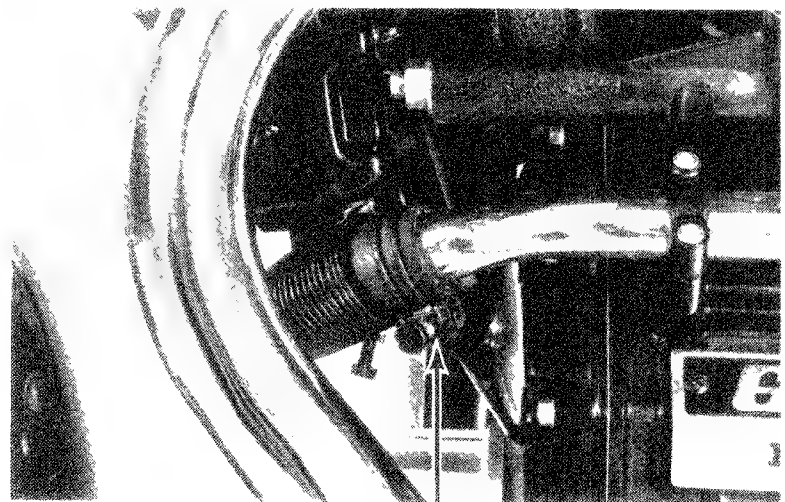
UPPER HOSE BAND

5. Remove the right side ignition coil.

6. Loosen the radiator upper hose band.



7. Loosen the radiator's lower hose band.



LOWER HOSE BAND

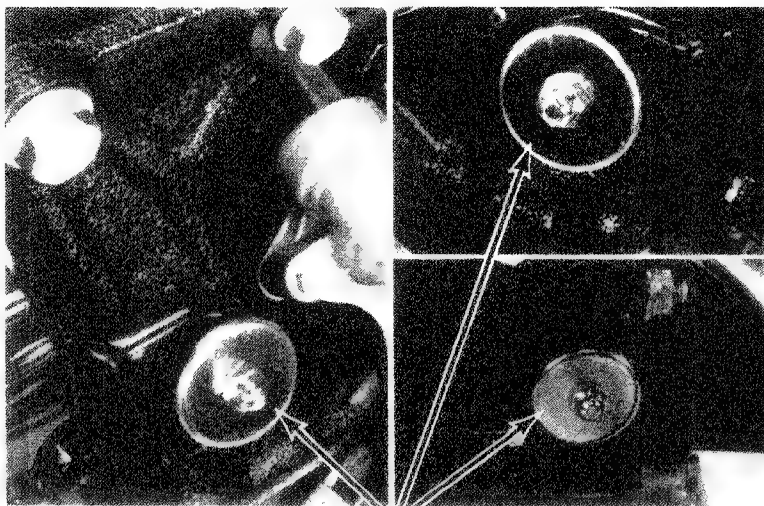


Remove the right and left radiator cover bolts.

Remove the radiator.

#### CAUTION

*Do not damage the radiator fins.*

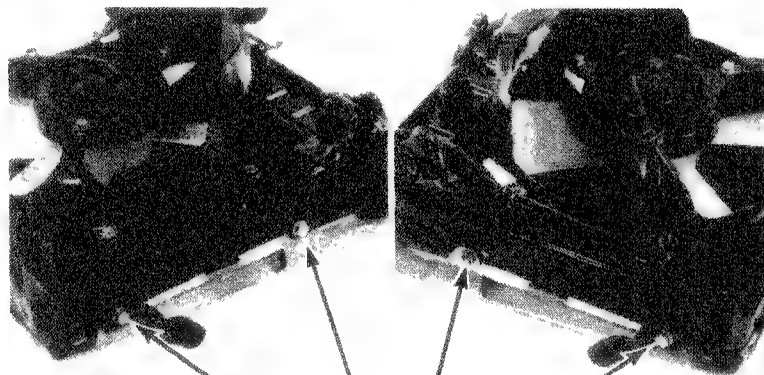


MOUNTING BOLTS

### DISASSEMBLY

Remove the radiator's right and left cover bolts.

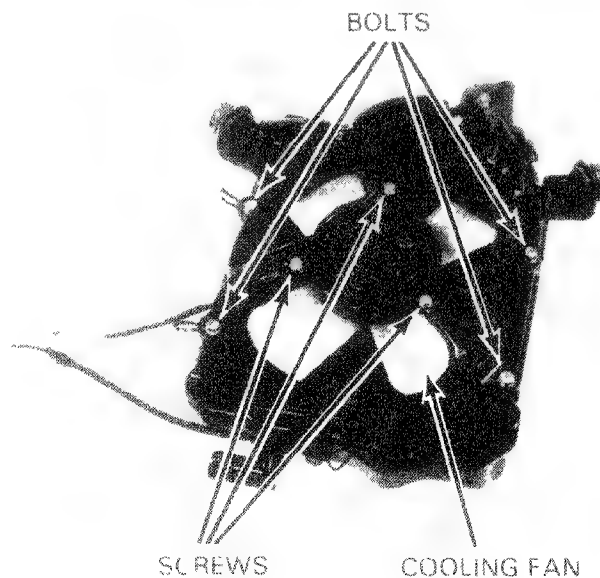
Separate the cover from the radiator.



COVER BOLTS

Remove the fan shroud with the fan by removing the four bolts.

Remove the fan attaching screws and remove the fan from the fan shroud.



SCREWS

COOLING FAN



**HONDA**

GL650  
GL650 INTERSTATE

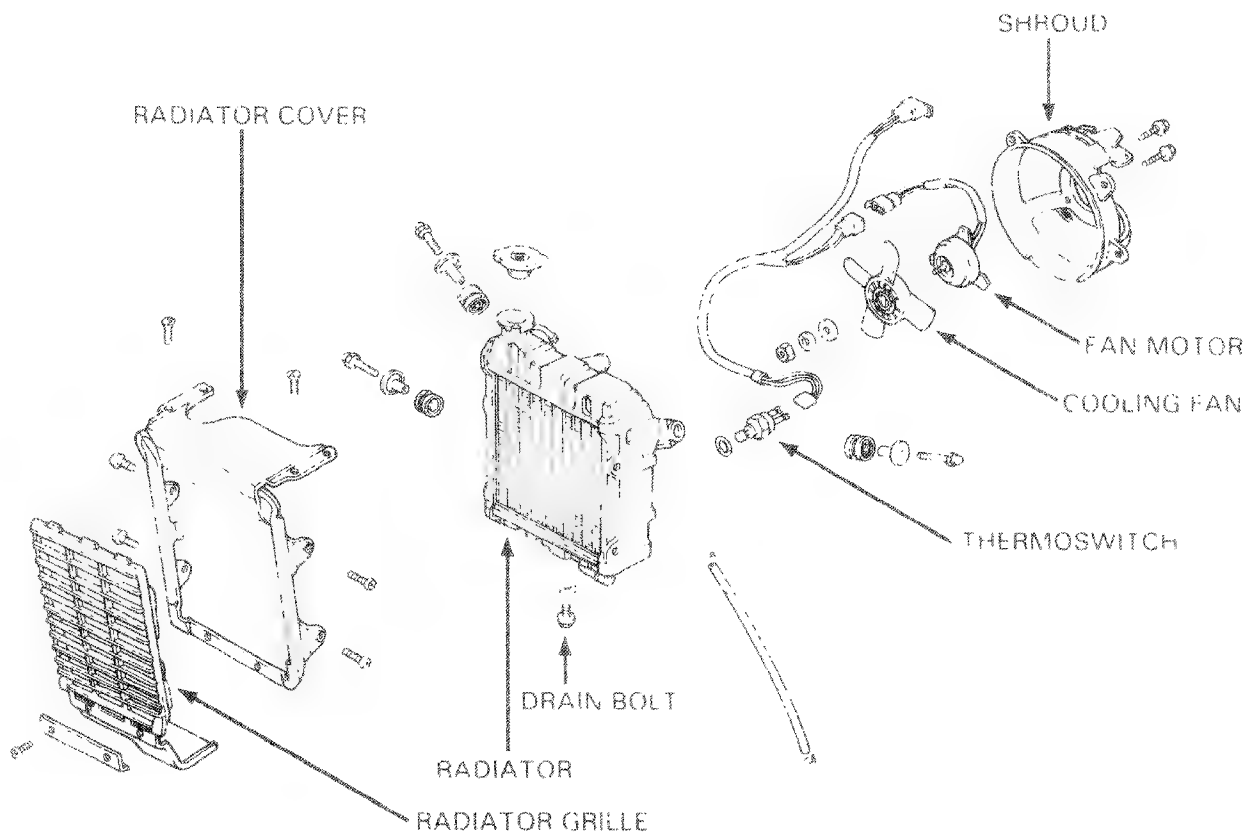
'83 ADDENDUM

Slide the fan attaching nut and pull the fan off the fan motor.

COOLING FAN

NUT

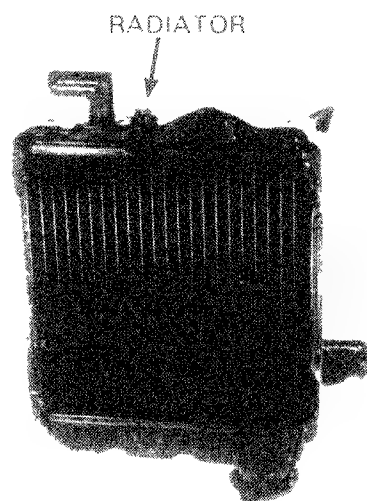
FAN MOTOR



## RADIATOR INSPECTION

Inspect the radiator soldered joints and hoses for leaks.

Blow dirt out from between core fins with compressed air. If insects, etc., are clogging the radiator, wash them off with low pressure water.



## ASSEMBLY/INSTALLATION

Insert the fan over the motor shaft.

Apply a locking agent to the fan motor shaft threads, install and torque the lock washer, lock washer and nut.



Attach the fan motor to the fan shroud with its TOP mark facing up.

Attach the fan shroud to the radiator.

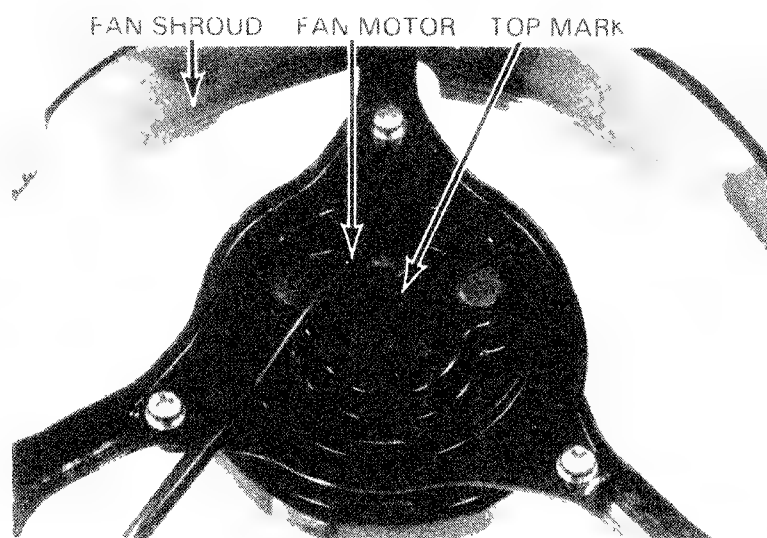
Install the radiator cover.

Installation of the radiator is essentially the reverse order of removal.

### CAUTION

*Do not damage the radiator fins.*

After installation, check the radiator and radiator hoses for leaks (page 9-10).



**HONDA**

GL650

GL650 INTERSTATE

'83 ADDENDUM

## 9. CAM CHAIN

### CAM CHAIN REMOVAL

On Interstate models, remove the fairing (Section 20).

Remove the engine (Section 5).

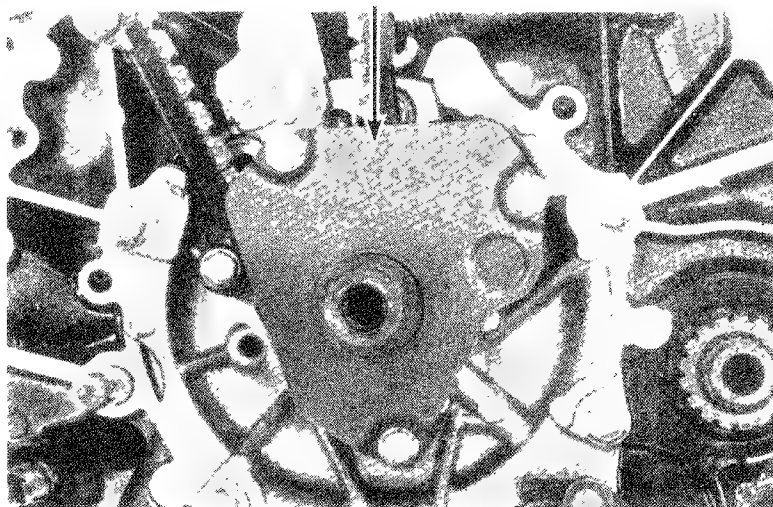
Remove the engine rear cover (Section 4).

Remove the starter reduction gear, flywheel and starter driven gear (Section 8).

Remove the chain guide set plate bolts.

Remove the chain guide set plate.

SET PLATE



Remove the cam chain tensioner set bolts.

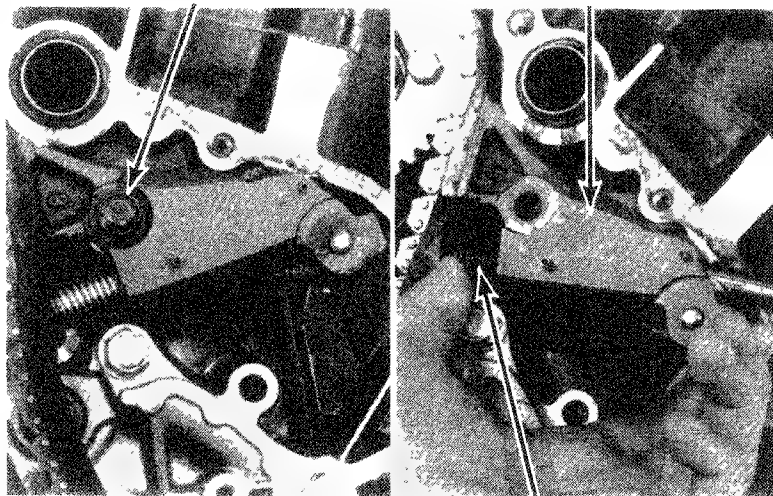
Remove the cam chain tensioner by compressing the push rod while pressing on the relief ball with a flat end screw driver as shown.

#### CAUTION

*The set bolt threads have a special pitch. Do not mix this bolt with the normal tensioners. If you install a normal bolt in the set bolt hole, it will ruin the threads.*

SET BOLT

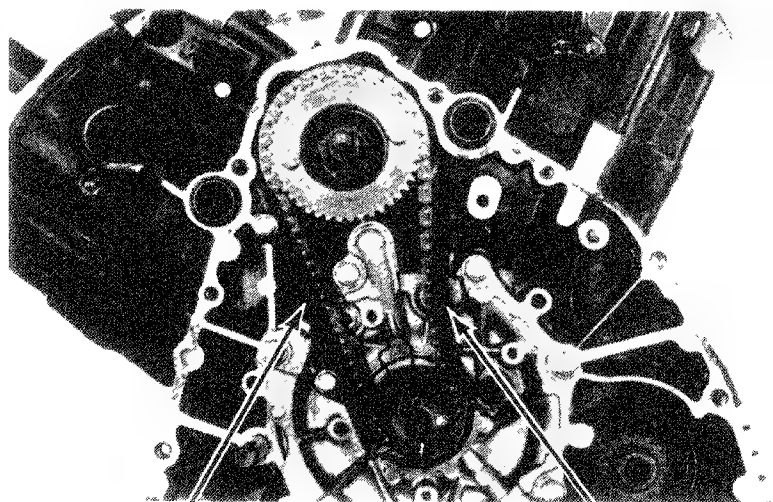
CAM CHAIN TENSIONER



PUSH ROD

Remove the chain tensioner slipper.

Remove the cam chain guide.

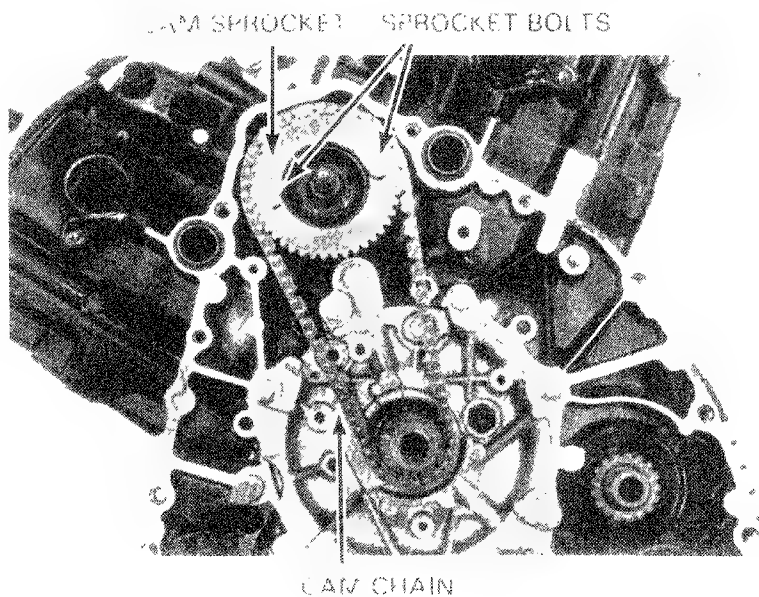


CAM CHAIN GUIDE

CHAIN TENSIONER SLIPPER



Remove the cam sprocket bolts and  
the cam sprocket and cam chain.



## CAM CHAIN/AUTOMATIC CAM CHAIN TENSIONER INSTALLATION

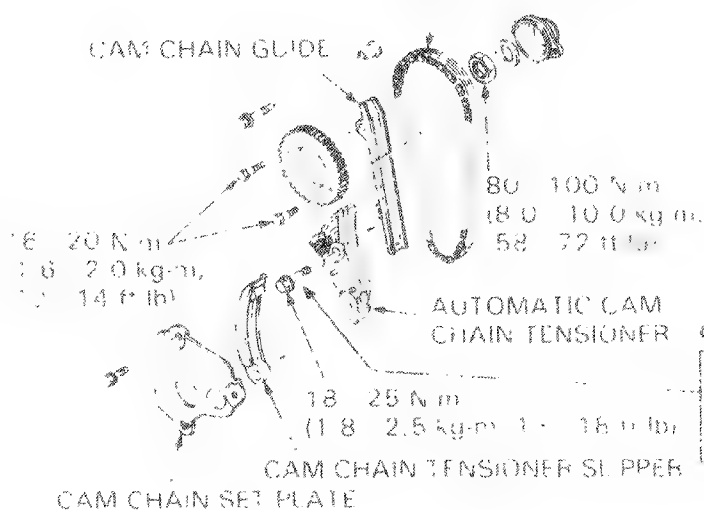
### NOTE

After installing the cam chain and cam sprocket, check that the valve timing is correct (page 1C-9).

Installation is essentially the reverse order of removal.



CAM CHAIN



### CAUTION

Be sure to use the correct set bolt. Failure to use the special bolt will ruin the threads in the engine case.



# HONDA

GL650  
GL650 INTERSTATE

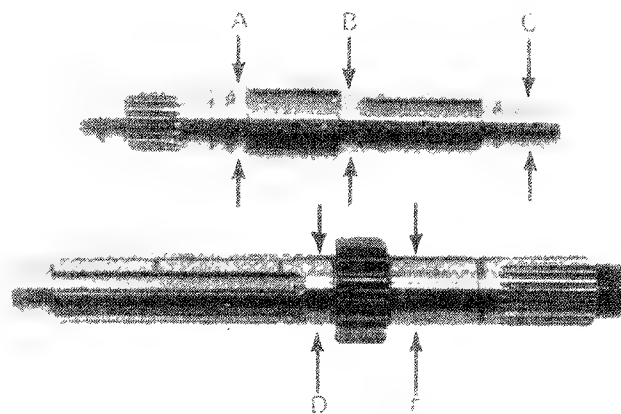
'83 ADDENDUM

## 10. TRANSMISSION INSPECTION

Check the following items on the transmission and counter shafts at the inspection point.

STANDARD SERVICE LIMIT

|           |            |   |           |
|-----------|------------|---|-----------|
| 1st 4th   | 27.46 mm   | A | 27.43 mm  |
| 2nd 5th   | 10.819 mm  |   | 10.80 mm  |
| 3rd 6th   | 24.980 mm  | B | 24.93 mm  |
| 4th 7th   | 10.9835 mm |   | 10.981 mm |
| 5th 8th   | 26.000 mm  | C | 19.96 mm  |
| 6th 9th   | 10.7814 mm |   | 10.786 mm |
| 7th 10th  | 24.980 mm  | D | 24.93 mm  |
| 8th 11th  | 10.9835 mm |   | 10.981 mm |
| 9th 12th  | 24.059 mm  | E | 24.96 mm  |
| 10th 13th | 10.9446 mm |   | 10.983 mm |



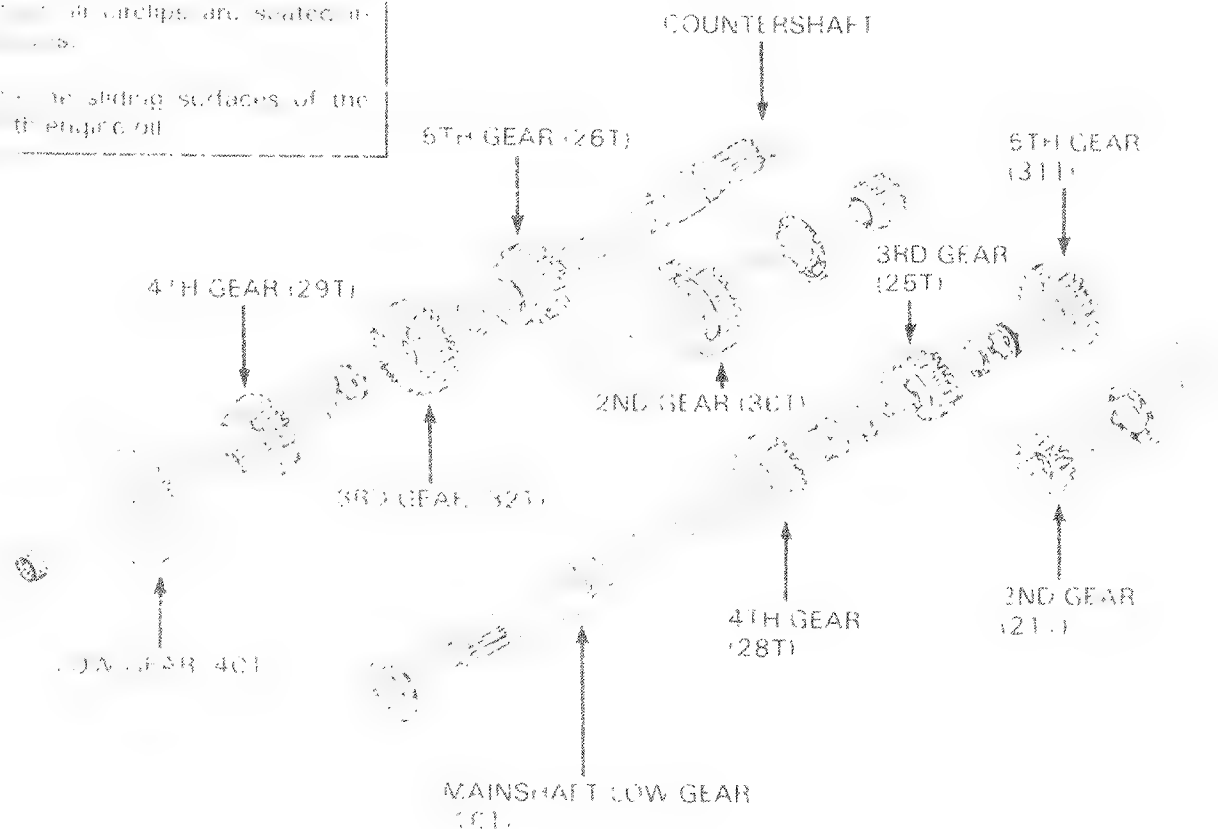
## ASSEMBLY

1. Check

the counter shafts for freedom of movement in the housing.

2. Check that the circlips are seated in the housing.

3. Check the sliding surfaces of the gears with engine oil.







## 11. FRONT WHEEL/ SUSPENSION

### FRONT WHEEL REMOVAL

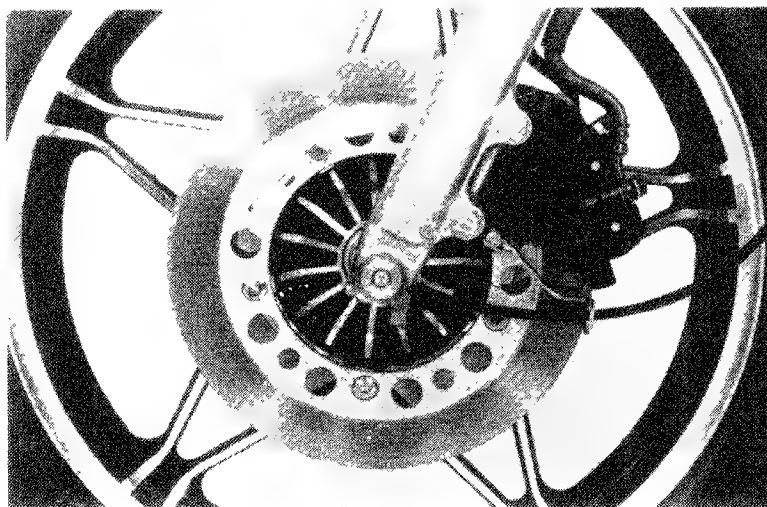
4. Lift the front wheel off the ground by placing a block or safety stand under the engine.

Remove the right and left caliper by removing the mounting bolts. Support the calipers so that they don't hang from the brake lines.

Remove the front axle holder and axle.

NOTE:

Be sure to support the front brake lever before removing the front wheel. To prevent any possible difficulty in refitting the brake disc between the brake pads.



### FRONT WHEEL INSTALLATION

Loosely install the axle holder with the front wheel back forward.

Insert the axle through the right fork leg (A) and the left fork leg (B), and screw it into the left fork leg.

Make sure the groove on the speedometer gear fits into the lug on the left fork leg.

Tighten the axle to specified torque.

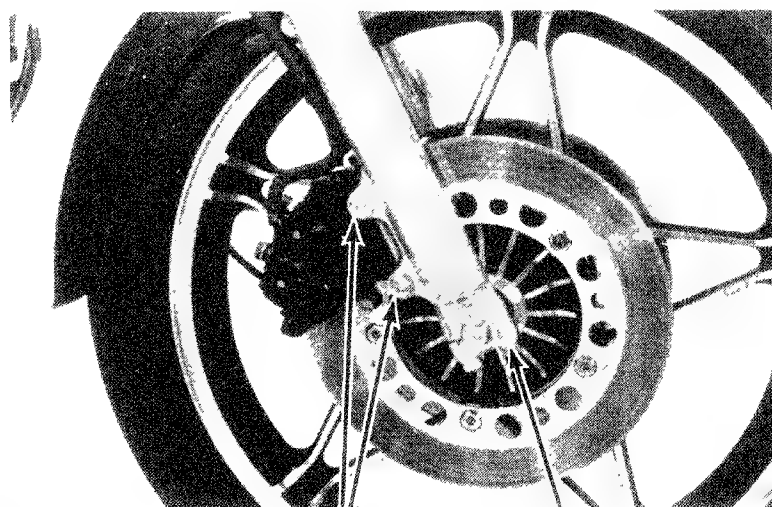
**TORQUE** 55 65 N·m (5.5 6.5 kg·m,  
40 47 ft·lb)

Tighten the nuts on the right axle holder to the specified torque, starting with the upper nut.

**TORQUE** 18 25 N·m (1.8 2.5 kg·m,  
13 18 ft·lb)

Slide the left caliper over the disc, taking care not to damage the brake pads. Install the caliper mounting bolts and tighten to the specified torque.

**TORQUE** 30 40 N·m (3.0 4.0 kg·m,  
22 29 ft·lb)



CALIPER MOUNTING BOLTS AXLE HOLDER





# HONDA

GL650  
GL650 INTERSTATE

'83 ADDENDUM

Using a 0.7 mm (0.028 in) feeler gauge, measure the clearance between each surface (inside and outside) of the right brake disc and the caliper holder. If the gauge inserts easily, the clearance is correct.

If the feeler gauge cannot be inserted easily, loosen the axle holder nuts and pull the right fork slider outward or push inward until the gauge can be inserted. Then, tighten the holder nuts with the gauge inserted. After tightening, remove the gauge.

Apply the brakes several times, then recheck caliper holder to disc clearance.

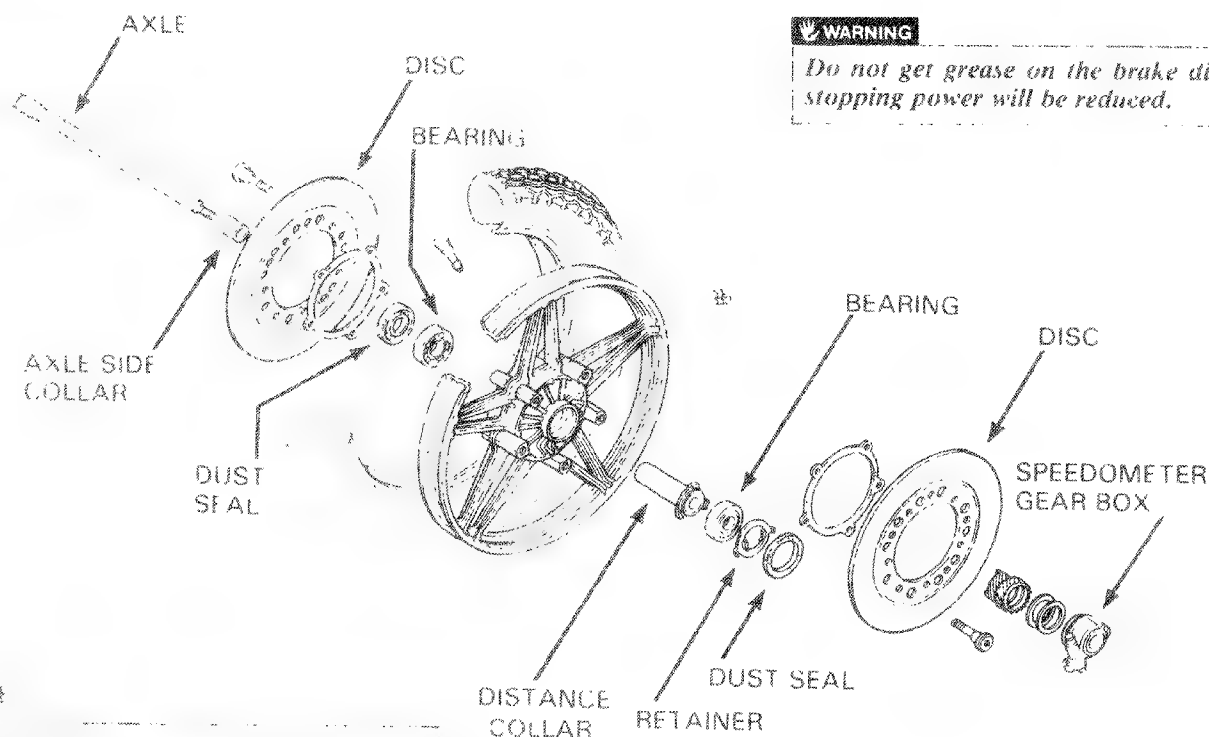


FEELER GAUGE

### WARNING

*Failure to provide adequate disc-to-caliper holder clearance may damage the brake discs and impair braking efficiency.*

## FRONT WHEEL ASSEMBLY



### WARNING

*Do not get grease on the brake disc or stopping power will be reduced.*

### NOTE

The cast wheel has no rim band.

The front wheel uses a tubeless tire. For tubeless tire repair, refer to the HONDA TUBELESS TIRE MANUAL.

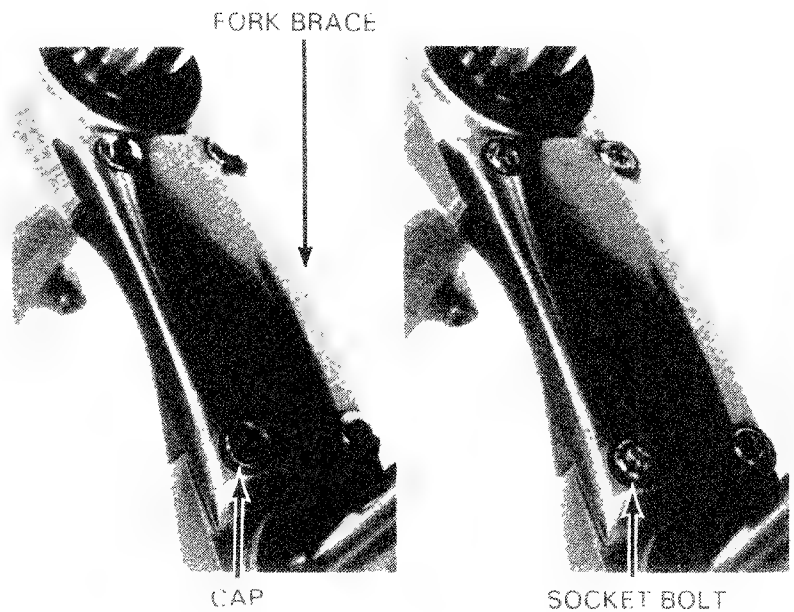


## FORK BRACE

It is necessary to remove the fork brace before removing the front fork.

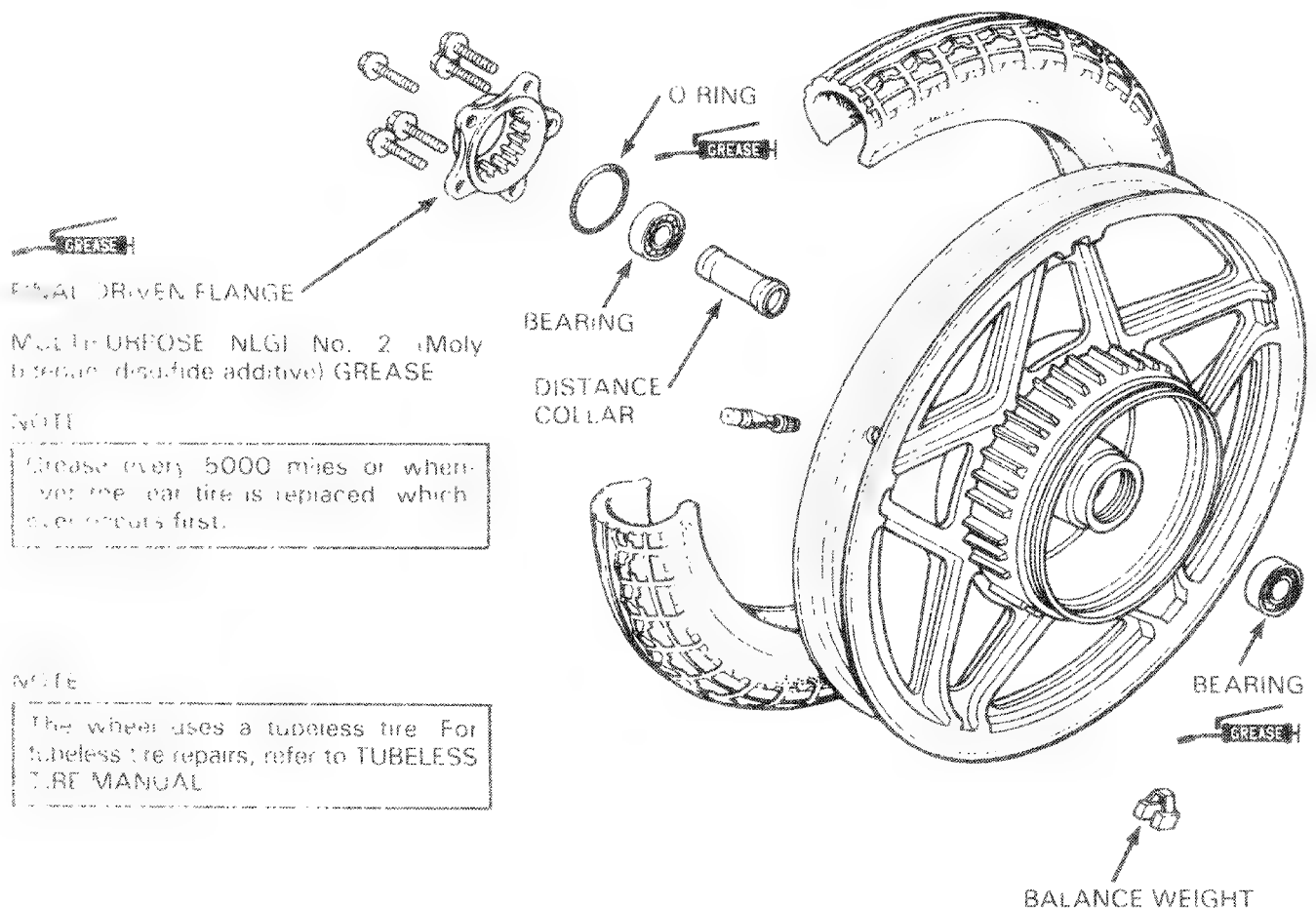
The front fork and front wheel should be completely assembled, and its bolts tightened, before installing the fork brace. Torque the fork brace socket bolts as specified.

**TORQUE:** 18 - 28 N.m (1.8 - 2.8 kg-m,  
13 - 20 ft-lb)



## 12. REAR WHEEL

### REAR WHEEL ASSEMBLY



**HONDA**

GL650

GL650 INTERSTATE

**'83 ADDENDUM**

## 13. SWITCHES

### THERMOSTATIC SWITCH

The cooling fan motor is actuated by the thermostatic switch.

Run the engine until coolant temperature reaches 88–92 °C (191–197 °F).

The fan motor should start running. The fan motor should stop when the coolant temperature drops to 83–87 °C (182–188 °F).

If the fan motor does not start, disconnect the black/blue and green leads from the thermostatic switch and short them together with a jumper wire as shown.

Turn the ignition switch on.

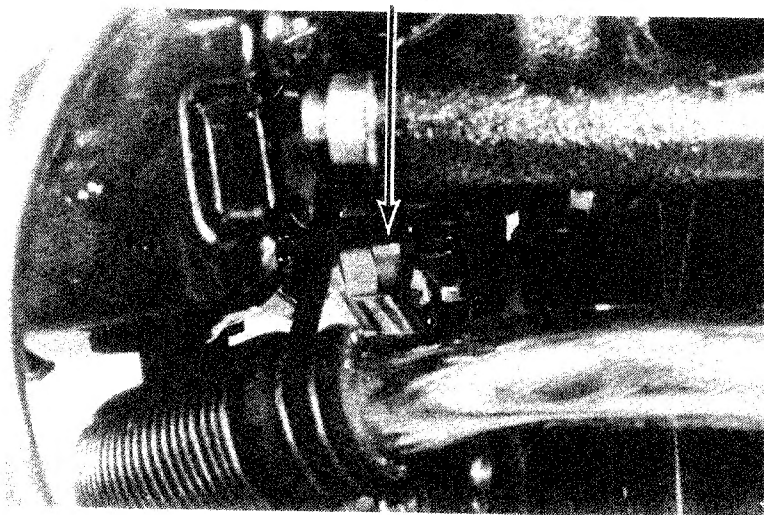
The cooling fan motor should start running.

If it starts, replace the fan thermostatic switch and retest.

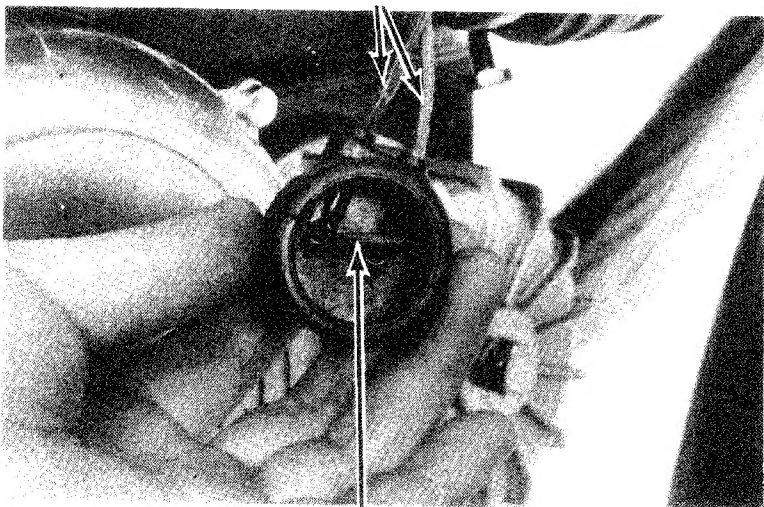
If it does not start, check for battery voltage from the black lead (positive) to green (negative) of the fan motor coupler.

If there is no voltage, check for blown or faulty fuse, loose terminals or connectors, or an open circuit.

THERMOSTATIC SWITCH



THERMOSTATIC SWITCH LEADS



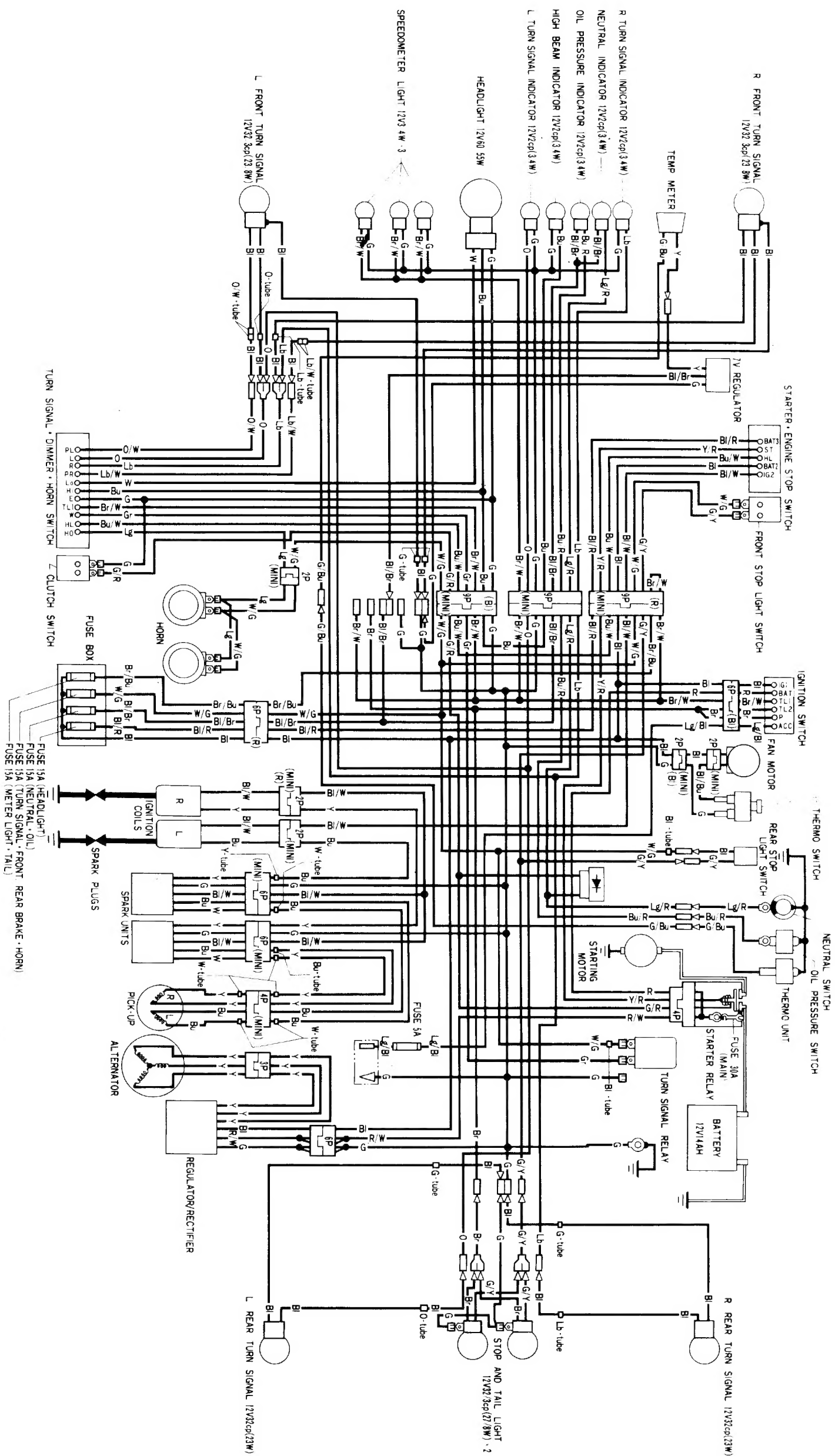
JUMPER WIRE



MEMO

# 14. WIRING DIAGRAMS

## GL650



IGNITION SWITCH CONTINUITY

| IGNITION SWITCH           | ENGINE STOP SWITCH | STARTER SWITCH      | TURN SIGNAL SWITCH | DIMMER SWITCH | HORN SWITCH |
|---------------------------|--------------------|---------------------|--------------------|---------------|-------------|
| BATT (G) ACC (TL) TL2 (P) | BAT2 (G2)          | BAT3 (HL) BAT2 (ST) | W R L TL1 PR PL    | HL H L        | HO E        |
| LOCK                      | OFF                | OFF                 | L2                 | FREE          | FREE        |
| OFF                       | RUN                | PUSH                | LI                 | HI            | PUSH        |
| ON                        | OFF                |                     | N                  |               |             |
| P                         |                    |                     | R1                 |               |             |
|                           |                    |                     | R2                 |               |             |

# GL650 INTERSTATE

